

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

|                               |                                             |                                               |                                       |                        |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|
| DATE:<br>5/23/18<br>WEDNESDAY | LOCATION:<br>NORTH & SOUTH:<br>EAST & WEST: | Moreno Valley<br>I-215 SB Ramps<br>Alessandro | PROJECT #:<br>LOCATION #:<br>CONTROL: | SC1761<br>12<br>SIGNAL |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|

|                                         |        |                                  |                                        |     |
|-----------------------------------------|--------|----------------------------------|----------------------------------------|-----|
| CLASS 4:<br>4 OR MORE<br>AXLE<br>TRUCKS | NOTES: | AM<br>PM<br>MD<br>OTHER<br>OTHER | <div>▲<br/>N<br/>◀ W<br/>S<br/>▼</div> | E ▶ |
|-----------------------------------------|--------|----------------------------------|----------------------------------------|-----|

|        | NORTHBOUND     |         |         | SOUTHBOUND     |         |           | EASTBOUND  |         |         | WESTBOUND  |         |         |       |
|--------|----------------|---------|---------|----------------|---------|-----------|------------|---------|---------|------------|---------|---------|-------|
|        | I-215 SB Ramps |         |         | I-215 SB Ramps |         |           | Alessandro |         |         | Alessandro |         |         |       |
| LANES: | NL<br>X        | NT<br>X | NR<br>X | SL<br>1.5      | ST<br>X | SR<br>1.5 | EL<br>X    | ET<br>3 | ER<br>1 | WL<br>X    | WT<br>3 | WR<br>1 | TOTAL |

|    |                |         |    |    |       |    |     |       |     |     |       |      |     |       |
|----|----------------|---------|----|----|-------|----|-----|-------|-----|-----|-------|------|-----|-------|
| AM | 7:00 AM        | 0       | 0  | 0  | 14    | 0  | 3   | 0     | 6   | 0   | 0     | 4    | 0   | 27    |
|    | 7:15 AM        | 0       | 0  | 0  | 5     | 0  | 6   | 0     | 5   | 0   | 0     | 5    | 2   | 23    |
|    | 7:30 AM        | 0       | 0  | 0  | 4     | 0  | 2   | 0     | 2   | 2   | 0     | 8    | 1   | 19    |
|    | 7:45 AM        | 0       | 0  | 0  | 2     | 0  | 4   | 0     | 5   | 1   | 0     | 7    | 0   | 19    |
|    | 8:00 AM        | 0       | 0  | 0  | 3     | 0  | 4   | 0     | 3   | 1   | 0     | 8    | 0   | 19    |
|    | 8:15 AM        | 0       | 0  | 0  | 7     | 0  | 1   | 0     | 3   | 2   | 0     | 7    | 0   | 20    |
|    | 8:30 AM        | 0       | 0  | 0  | 3     | 0  | 1   | 0     | 2   | 1   | 0     | 6    | 0   | 13    |
|    | 8:45 AM        | 0       | 0  | 0  | 1     | 0  | 0   | 0     | 4   | 1   | 0     | 9    | 1   | 16    |
|    | 9:00 AM        | 0       | 0  | 0  | 0     | 0  | 0   | 0     | 0   | 0   | 0     | 0    | 0   | 0     |
|    | 9:15 AM        | 0       | 0  | 0  | 0     | 0  | 0   | 0     | 0   | 0   | 0     | 0    | 0   | 0     |
|    | 9:30 AM        | 0       | 0  | 0  | 0     | 0  | 0   | 0     | 0   | 0   | 0     | 0    | 0   | 0     |
|    | 9:45 AM        | 0       | 0  | 0  | 0     | 0  | 0   | 0     | 0   | 0   | 0     | 0    | 0   | 0     |
|    | VOLUMES        | 0       | 0  | 0  | 39    | 0  | 21  | 0     | 30  | 8   | 0     | 54   | 4   | 156   |
|    | APPROACH %     | 0%      | 0% | 0% | 65%   | 0% | 35% | 0%    | 79% | 21% | 0%    | 93%  | 7%  |       |
| PM | APP/DEPART     | 0       | /  | 4  | 60    | /  | 8   | 38    | /   | 69  | 58    | /    | 75  | 0     |
|    | BEGIN PEAK HR  | 7:00 AM |    |    |       |    |     |       |     |     |       |      |     |       |
|    | VOLUMES        | 0       | 0  | 0  | 25    | 0  | 15  | 0     | 18  | 3   | 0     | 24   | 3   | 88    |
|    | APPROACH %     | 0%      | 0% | 0% | 63%   | 0% | 38% | 0%    | 86% | 14% | 0%    | 89%  | 11% |       |
|    | PEAK HR FACTOR | 0.000   |    |    | 0.588 |    |     | 0.875 |     |     | 0.750 |      |     | 0.815 |
|    | APP/DEPART     | 0       | /  | 3  | 40    | /  | 3   | 21    | /   | 43  | 27    | /    | 39  | 0     |
|    | 03:00 PM       | 0       | 0  | 0  | 0     | 0  | 0   | 0     | 0   | 0   | 0     | 0    | 0   | 0     |
|    | 3:15 PM        | 0       | 0  | 0  | 0     | 0  | 0   | 0     | 0   | 0   | 0     | 0    | 0   | 0     |
|    | 3:30 PM        | 0       | 0  | 0  | 0     | 0  | 0   | 0     | 0   | 0   | 0     | 0    | 0   | 0     |
|    | 3:45 PM        | 0       | 0  | 0  | 0     | 0  | 0   | 0     | 0   | 0   | 0     | 0    | 0   | 0     |
|    | 4:00 PM        | 0       | 0  | 0  | 8     | 0  | 0   | 0     | 0   | 1   | 0     | 6    | 0   | 15    |
|    | 4:15 PM        | 0       | 0  | 0  | 2     | 0  | 0   | 0     | 7   | 0   | 0     | 3    | 0   | 12    |
|    | 4:30 PM        | 0       | 0  | 0  | 2     | 0  | 3   | 0     | 0   | 3   | 0     | 2    | 0   | 10    |
|    | 4:45 PM        | 0       | 0  | 0  | 3     | 0  | 1   | 0     | 1   | 0   | 0     | 0    | 0   | 5     |
|    | 5:00 PM        | 0       | 0  | 0  | 3     | 0  | 2   | 0     | 2   | 1   | 0     | 1    | 0   | 9     |
|    | 5:15 PM        | 0       | 0  | 0  | 1     | 0  | 0   | 0     | 2   | 0   | 0     | 3    | 0   | 6     |
|    | 5:30 PM        | 0       | 0  | 0  | 5     | 0  | 2   | 0     | 0   | 0   | 0     | 1    | 0   | 8     |
|    | 5:45 PM        | 0       | 0  | 0  | 4     | 0  | 3   | 0     | 0   | 1   | 0     | 1    | 0   | 9     |
|    | VOLUMES        | 0       | 0  | 0  | 28    | 0  | 11  | 0     | 12  | 6   | 0     | 17   | 0   | 74    |
|    | APPROACH %     | 0%      | 0% | 0% | 72%   | 0% | 28% | 0%    | 67% | 33% | 0%    | 100% | 0%  |       |
|    | APP/DEPART     | 0       | /  | 0  | 39    | /  | 6   | 18    | /   | 40  | 17    | /    | 28  | 0     |
|    | BEGIN PEAK HR  | 4:00 PM |    |    |       |    |     |       |     |     |       |      |     |       |
|    | VOLUMES        | 0       | 0  | 0  | 15    | 0  | 4   | 0     | 8   | 4   | 0     | 11   | 0   | 42    |
|    | APPROACH %     | 0%      | 0% | 0% | 79%   | 0% | 21% | 0%    | 67% | 33% | 0%    | 100% | 0%  |       |
|    | PEAK HR FACTOR | 0.000   |    |    | 0.594 |    |     | 0.429 |     |     | 0.458 |      |     | 0.700 |
|    | APP/DEPART     | 0       | /  | 0  | 19    | /  | 4   | 12    | /   | 23  | 11    | /    | 15  | 0     |

| U-TURNS |    |    |    |     |
|---------|----|----|----|-----|
| NB      | SB | EB | WB | TTL |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |

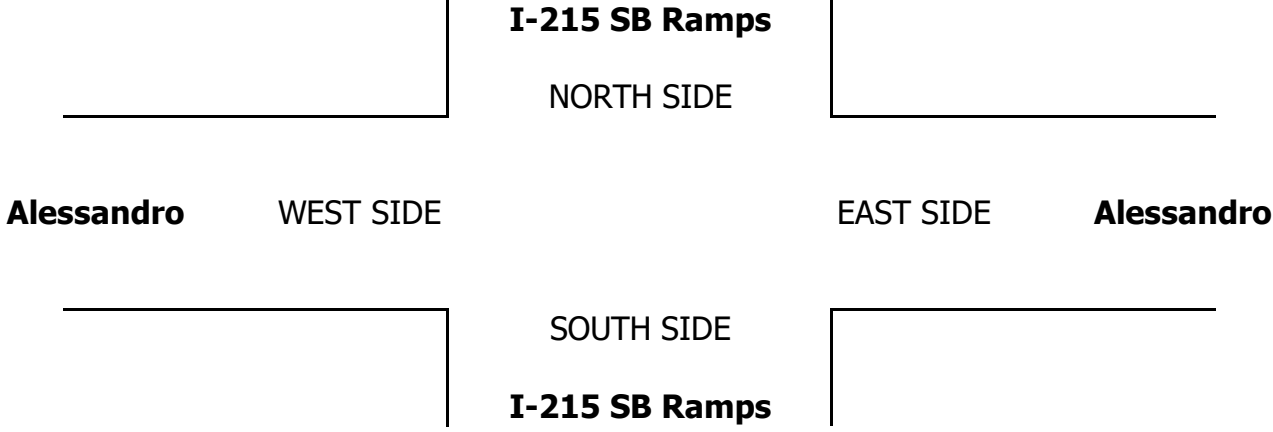
| RTOR |     |     |     |
|------|-----|-----|-----|
| NRR  | SRR | ERR | WRR |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |

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| 0 | 0 | 0 | 0 | 0 |
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|---|---|---|---|
| 0 | 0 | 1 | 0 |
|---|---|---|---|



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:  
5/23/18  
WEDNESDAY

LOCATION:  
NORTH & SOUTH:  
EAST & WEST:

Moreno Valley  
I-215 SB Ramps  
Alessandro

PROJECT #:  
LOCATION #:  
CONTROL:

SC1761  
12  
SIGNAL

CLASS 5:  
RV

NOTES:

AM  
PM  
MD  
OTHER  
OTHER

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|        | NORTHBOUND     |    |    | SOUTHBOUND     |    |    | EASTBOUND  |    |    | WESTBOUND  |    |    |       |
|--------|----------------|----|----|----------------|----|----|------------|----|----|------------|----|----|-------|
|        | I-215 SB Ramps |    |    | I-215 SB Ramps |    |    | Alessandro |    |    | Alessandro |    |    |       |
| LANES: | NL             | NT | NR | SL             | ST | SR | EL         | ET | ER | WL         | WT | WR | TOTAL |

|    |                |         |    |    |       |    |      |       |      |    |       |    |   |
|----|----------------|---------|----|----|-------|----|------|-------|------|----|-------|----|---|
| AM | 7:00 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 7:15 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 7:30 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 1     | 0    | 0  | 0     | 0  | 1 |
|    | 7:45 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 8:00 AM        | 0       | 0  | 0  | 0     | 0  | 1    | 0     | 0    | 0  | 0     | 0  | 1 |
|    | 8:15 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 8:30 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 8:45 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 9:00 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 9:15 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 9:30 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 9:45 AM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | VOLUMES        | 0       | 0  | 0  | 0     | 0  | 1    | 0     | 1    | 0  | 0     | 0  | 2 |
|    | APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 100% | 0%    | 100% | 0% | 0%    | 0% |   |
|    | APP/DEPART     | 0       | /  | 0  | 1     | /  | 0    | 1     | /    | 1  | 0     | /  | 1 |
| PM | BEGIN PEAK HR  | 7:15 AM |    |    |       |    |      |       |      |    |       |    |   |
|    | VOLUMES        | 0       | 0  | 0  | 0     | 0  | 1    | 0     | 1    | 0  | 0     | 0  | 2 |
|    | APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 100% | 0%    | 100% | 0% | 0%    | 0% |   |
|    | PEAK HR FACTOR | 0.000   |    |    | 0.250 |    |      | 0.250 |      |    | 0.000 |    |   |
|    | APP/DEPART     | 0       | /  | 0  | 1     | /  | 0    | 1     | /    | 1  | 0     | /  | 1 |
|    | 03:00 PM       | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 3:15 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 3:30 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 3:45 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 4:00 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 1     | 0  | 1 |
|    | 4:15 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 4:30 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 4:45 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 5:00 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 5:15 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 5:30 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | 5:45 PM        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 0     | 0  | 0 |
|    | VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 1     | 0  | 1 |
|    | APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0%   | 0%    | 0%   | 0% | 100%  | 0% |   |
|    | APP/DEPART     | 0       | /  | 0  | 0     | /  | 0    | 0     | /    | 0  | 1     | /  | 1 |
|    | BEGIN PEAK HR  | 3:15 PM |    |    |       |    |      |       |      |    |       |    |   |
|    | VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0    | 0     | 0    | 0  | 1     | 0  | 1 |
|    | APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0%   | 0%    | 0%   | 0% | 100%  | 0% |   |
|    | PEAK HR FACTOR | 0.000   |    |    | 0.000 |    |      | 0.000 |      |    | 0.250 |    |   |
|    | APP/DEPART     | 0       | /  | 0  | 0     | /  | 0    | 0     | /    | 0  | 1     | /  | 1 |

| U-TURNS |    |    |    |     |
|---------|----|----|----|-----|
| NB      | SB | EB | WB | TTL |

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| 0 | 0 | 0 | 0 | 0 |
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| RTOR |     |     |     |
|------|-----|-----|-----|
| NRR  | SRR | ERR | WRR |

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| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
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I-215 SB Ramps

NORTH SIDE

Alessandro

WEST SIDE

EAST SIDE

Alessandro

SOUTH SIDE

I-215 SB Ramps

3.1-112

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

|                               |                                             |                                               |                                       |                        |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|
| DATE:<br>5/23/18<br>WEDNESDAY | LOCATION:<br>NORTH & SOUTH:<br>EAST & WEST: | Moreno Valley<br>I-215 SB Ramps<br>Alessandro | PROJECT #:<br>LOCATION #:<br>CONTROL: | SC1761<br>12<br>SIGNAL |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|

|          |        |       |     |   |     |
|----------|--------|-------|-----|---|-----|
| CLASS 6: | NOTES: | AM    |     | ▲ |     |
| BUSES    |        | PM    |     | N |     |
|          |        | MD    | ◄ W |   | E ► |
|          |        | OTHER |     | S |     |
|          |        | OTHER |     | ▼ |     |

|        | NORTHBOUND     |    |    | SOUTHBOUND     |    |    | EASTBOUND  |    |    | WESTBOUND  |    |    |       |
|--------|----------------|----|----|----------------|----|----|------------|----|----|------------|----|----|-------|
|        | I-215 SB Ramps |    |    | I-215 SB Ramps |    |    | Alessandro |    |    | Alessandro |    |    |       |
| LANES: | NL             | NT | NR | SL             | ST | SR | EL         | ET | ER | WL         | WT | WR | TOTAL |

|                |         |    |    |       |    |    |       |      |     |       |      |     |       |
|----------------|---------|----|----|-------|----|----|-------|------|-----|-------|------|-----|-------|
| 7:00 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 3    | 1   | 4     |
| 7:15 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 2    | 0   | 2     |
| 7:30 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 1    | 0   | 0     | 4    | 0   | 5     |
| 7:45 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 1    | 0   | 0     | 0    | 0   | 1     |
| 8:00 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 1    | 1   | 0     | 0    | 0   | 2     |
| 8:15 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 2    | 0   | 2     |
| 8:30 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 1    | 0   | 0     | 0    | 0   | 1     |
| 8:45 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 9:00 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 9:15 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 9:30 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 9:45 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 4    | 1   | 0     | 11   | 1   | 17    |
| APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0% | 0%    | 80%  | 20% | 0%    | 92%  | 8%  |       |
| APP/DEPART     | 0       | /  | 1  | 0     | /  | 1  | 5     | /    | 4   | 12    | /    | 11  | 0     |
| BEGIN PEAK HR  | 7:00 AM |    |    |       |    |    |       |      |     |       |      |     |       |
| VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 2    | 0   | 0     | 9    | 1   | 12    |
| APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0% | 0%    | 100% | 0%  | 0%    | 90%  | 10% |       |
| PEAK HR FACTOR | 0.000   |    |    | 0.000 |    |    | 0.500 |      |     | 0.625 |      |     | 0.600 |
| APP/DEPART     | 0       | /  | 1  | 0     | /  | 0  | 2     | /    | 2   | 10    | /    | 9   | 0     |
| 03:00 PM       | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 3:15 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 3:30 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 3:45 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 4:00 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 4:15 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 1    | 0   | 0     | 1    | 0   | 2     |
| 4:30 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 1    | 0   | 0     | 1    | 0   | 2     |
| 4:45 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 2    | 0   | 2     |
| 5:00 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 1    | 0   | 0     | 1    | 0   | 2     |
| 5:15 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 1    | 0   | 0     | 0    | 0   | 1     |
| 5:30 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0    | 0   | 0     | 0    | 0   | 0     |
| 5:45 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 1    | 0   | 0     | 0    | 0   | 1     |
| VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 5    | 0   | 0     | 5    | 0   | 10    |
| APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0% | 0%    | 100% | 0%  | 0%    | 100% | 0%  |       |
| APP/DEPART     | 0       | /  | 0  | 0     | /  | 0  | 5     | /    | 5   | 5     | /    | 5   | 0     |
| BEGIN PEAK HR  | 4:15 PM |    |    |       |    |    |       |      |     |       |      |     |       |
| VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 3    | 0   | 0     | 5    | 0   | 8     |
| APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0% | 0%    | 100% | 0%  | 0%    | 100% | 0%  |       |
| PEAK HR FACTOR | 0.000   |    |    | 0.000 |    |    | 0.750 |      |     | 0.625 |      |     | 1.000 |
| APP/DEPART     | 0       | /  | 0  | 0     | /  | 0  | 3     | /    | 3   | 5     | /    | 5   | 0     |

| U-TURNS |    |    |    |     |
|---------|----|----|----|-----|
| NB      | SB | EB | WB | TTL |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |

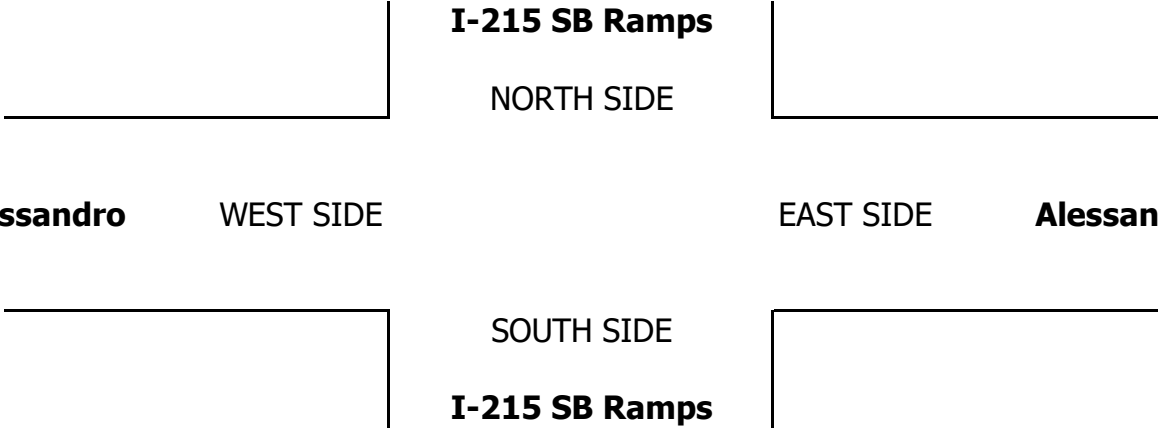
| RTOR |     |     |     |
|------|-----|-----|-----|
| NRR  | SRR | ERR | WRR |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
|---|---|---|---|

|   |   |   |   |   |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
|---|---|---|---|



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

T816

|                          |                                             |                                               |                                       |                        |
|--------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|
| DATE:<br>Wed, May 23, 18 | LOCATION:<br>NORTH & SOUTH:<br>EAST & WEST: | Moreno Valley<br>I-215 NB Ramps<br>Alessandro | PROJECT #:<br>LOCATION #:<br>CONTROL: | SC1761<br>13<br>SIGNAL |
|--------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|

|        |       |     |   |     |
|--------|-------|-----|---|-----|
| NOTES: | AM    |     | ▲ |     |
|        | PM    |     | N |     |
|        | MD    | ◄ W |   | E ► |
|        | OTHER |     | S |     |
|        | OTHER |     | ▼ |     |

☒ Add U-Turns to Left Turns

|        | NORTHBOUND     |           |           | SOUTHBOUND     |         |         | EASTBOUND  |         |         | WESTBOUND  |         |         |       |
|--------|----------------|-----------|-----------|----------------|---------|---------|------------|---------|---------|------------|---------|---------|-------|
|        | I-215 NB Ramps |           |           | I-215 NB Ramps |         |         | Alessandro |         |         | Alessandro |         |         |       |
| LANES: | NL<br>1.3      | NT<br>0.3 | NR<br>1.3 | SL<br>X        | ST<br>X | SR<br>X | EL<br>1    | ET<br>3 | ER<br>X | WL<br>X    | WT<br>3 | WR<br>0 | TOTAL |

|    |            |       |    |     |    |    |    |       |       |       |       |       |       |       |
|----|------------|-------|----|-----|----|----|----|-------|-------|-------|-------|-------|-------|-------|
| AM | 7:00 AM    | 212   | 0  | 14  | 0  | 0  | 0  | 17    | 140   | 0     | 0     | 429   | 29    | 841   |
|    | 7:15 AM    | 219   | 0  | 27  | 0  | 0  | 0  | 9     | 166   | 0     | 0     | 427   | 24    | 872   |
|    | 7:30 AM    | 222   | 0  | 47  | 0  | 0  | 0  | 9     | 209   | 0     | 0     | 377   | 21    | 885   |
|    | 7:45 AM    | 200   | 0  | 54  | 0  | 0  | 0  | 11    | 213   | 0     | 0     | 364   | 17    | 859   |
|    | 8:00 AM    | 219   | 0  | 72  | 0  | 0  | 0  | 14    | 206   | 0     | 0     | 322   | 26    | 859   |
|    | 8:15 AM    | 154   | 0  | 34  | 0  | 0  | 0  | 21    | 204   | 0     | 0     | 313   | 31    | 757   |
|    | 8:30 AM    | 202   | 1  | 37  | 0  | 0  | 0  | 30    | 173   | 0     | 0     | 231   | 33    | 707   |
|    | 8:45 AM    | 160   | 1  | 48  | 0  | 0  | 0  | 25    | 128   | 0     | 0     | 192   | 26    | 580   |
|    | 9:00 AM    | 0     | 0  | 0   | 0  | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|    | 9:15 AM    | 0     | 0  | 0   | 0  | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|    | 9:30 AM    | 0     | 0  | 0   | 0  | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|    | 9:45 AM    | 0     | 0  | 0   | 0  | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|    | VOLUMES    | 1,588 | 2  | 333 | 0  | 0  | 0  | 136   | 1,439 | 0     | 0     | 2,655 | 207   | 6,360 |
|    | APPROACH % | 83%   | 0% | 17% | 0% | 0% | 0% | 9%    | 91%   | 0%    | 0%    | 93%   | 7%    |       |
|    | APP/DEPART | 1,923 | /  | 344 | 0  | /  | 0  | 1,575 | /     | 1,772 | 2,862 | /     | 4,244 | 0     |

|                |         |       |     |    |       |    |       |       |       |       |       |       |       |
|----------------|---------|-------|-----|----|-------|----|-------|-------|-------|-------|-------|-------|-------|
| VOLUMES        | 1,588   | 2     | 333 | 0  | 0     | 0  | 136   | 1,439 | 0     | 0     | 2,655 | 207   | 6,360 |
| APPROACH %     | 83%     | 0%    | 17% | 0% | 0%    | 0% | 9%    | 91%   | 0%    | 0%    | 93%   | 7%    |       |
| APP/DEPART     | 1,923   | /     | 344 | 0  | /     | 0  | 1,575 | /     | 1,772 | 2,862 | /     | 4,244 | 0     |
| BEGIN PEAK HR  | 7:15 AM |       |     |    |       |    |       |       |       |       |       |       |       |
| VOLUMES        | 860     | 0     | 200 | 0  | 0     | 0  | 43    | 794   | 0     | 0     | 1,490 | 88    | 3,475 |
| APPROACH %     | 81%     | 0%    | 19% | 0% | 0%    | 0% | 5%    | 95%   | 0%    | 0%    | 94%   | 6%    |       |
| PEAK HR FACTOR |         | 0.911 |     |    | 0.000 |    |       | 0.934 |       |       | 0.875 |       | 0.982 |
| APP/DEPART     | 1,060   | /     | 130 | 0  | /     | 0  | 837   | /     | 994   | 1,578 | /     | 2,351 | 0     |

|    |            |       |    |     |    |    |    |       |       |       |       |       |       |       |
|----|------------|-------|----|-----|----|----|----|-------|-------|-------|-------|-------|-------|-------|
| PM | 03:00 PM   | 0     | 0  | 0   | 0  | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|    | 3:15 PM    | 0     | 0  | 0   | 0  | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|    | 3:30 PM    | 0     | 0  | 0   | 0  | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|    | 3:45 PM    | 0     | 0  | 0   | 0  | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|    | 4:00 PM    | 173   | 8  | 97  | 0  | 0  | 0  | 27    | 352   | 0     | 0     | 239   | 33    | 929   |
|    | 4:15 PM    | 132   | 0  | 80  | 0  | 0  | 0  | 41    | 390   | 0     | 0     | 221   | 51    | 915   |
|    | 4:30 PM    | 138   | 0  | 59  | 0  | 0  | 0  | 55    | 317   | 0     | 0     | 232   | 43    | 844   |
|    | 4:45 PM    | 112   | 0  | 50  | 0  | 0  | 0  | 59    | 343   | 0     | 0     | 212   | 42    | 818   |
|    | 5:00 PM    | 115   | 1  | 30  | 0  | 0  | 0  | 84    | 356   | 0     | 0     | 230   | 54    | 870   |
|    | 5:15 PM    | 121   | 1  | 38  | 0  | 0  | 0  | 52    | 367   | 0     | 1     | 195   | 36    | 811   |
|    | 5:30 PM    | 93    | 0  | 53  | 0  | 0  | 0  | 72    | 345   | 0     | 0     | 228   | 61    | 852   |
|    | 5:45 PM    | 86    | 0  | 46  | 0  | 0  | 0  | 74    | 348   | 0     | 0     | 202   | 46    | 802   |
|    | VOLUMES    | 970   | 10 | 453 | 0  | 0  | 0  | 464   | 2,818 | 0     | 1     | 1,759 | 366   | 6,841 |
|    | APPROACH % | 68%   | 1% | 32% | 0% | 0% | 0% | 14%   | 86%   | 0%    | 0%    | 83%   | 17%   |       |
|    | APP/DEPART | 1,433 | /  | 839 | 0  | /  | 0  | 3,282 | /     | 3,272 | 2,126 | /     | 2,730 | 0     |

|                |         |    |     |       |    |    |       |       |       |       |       |       |       |
|----------------|---------|----|-----|-------|----|----|-------|-------|-------|-------|-------|-------|-------|
| VOLUMES        | 970     | 10 | 453 | 0     | 0  | 0  | 464   | 2,818 | 0     | 1     | 1,759 | 366   | 6,841 |
| APPROACH %     | 68%     | 1% | 32% | 0%    | 0% | 0% | 14%   | 86%   | 0%    | 0%    | 83%   | 17%   |       |
| APP/DEPART     | 1,433   | /  | 839 | 0     | /  | 0  | 3,282 | /     | 3,272 | 2,126 | /     | 2,730 | 0     |
| BEGIN PEAK HR  | 4:00 PM |    |     |       |    |    |       |       |       |       |       |       |       |
| VOLUMES        | 555     | 8  | 286 | 0     | 0  | 0  | 182   | 1,402 | 0     | 0     | 904   | 169   | 3,506 |
| APPROACH %     | 65%     | 1% | 34% | 0%    | 0% | 0% | 11%   | 89%   | 0%    | 0%    | 84%   | 16%   |       |
| PEAK HR FACTOR | 0.763   |    |     | 0.000 |    |    | 0.919 |       |       | 0.975 |       |       | 0.943 |
| APP/DEPART     | 849     | /  | 358 | 0     | /  | 0  | 1,584 | /     | 1,688 | 1,073 | /     | 1,460 | 0     |

|  |               |         |    |     |    |    |    |       |       |       |       |       |       |       |
|--|---------------|---------|----|-----|----|----|----|-------|-------|-------|-------|-------|-------|-------|
|  | APP/DEPART    | 849     | /  | 358 | 0  | /  | 0  | 1,584 | /     | 1,688 | 1,073 | /     | 1,460 | 0     |
|  | VOLUMES       | 970     | 10 | 453 | 0  | 0  | 0  | 464   | 2,818 | 0     | 1     | 1,759 | 366   | 6,841 |
|  | APPROACH %    | 68%     | 1% | 32% | 0% | 0% | 0% | 14%   | 86%   | 0%    | 0%    | 83%   | 17%   |       |
|  | APP/DEPART    | 1,433   | /  | 839 | 0  | /  | 0  | 3,282 | /     | 3,272 | 2,126 | /     | 2,730 | 0     |
|  | BEGIN PEAK HR | 4:00 PM |    |     | 0  | 0  | 0  | 182   | 1,402 | 0     | 0     | 904   | 169   | 3,506 |

|  |               |         |    |     |    |    |    |       |       |       |       |       |       |       |
|--|---------------|---------|----|-----|----|----|----|-------|-------|-------|-------|-------|-------|-------|
|  | APP/DEPART    | 849     | /  | 358 | 0  | /  | 0  | 1,584 | /     | 1,688 | 1,073 | /     | 1,460 | 0     |
|  | VOLUMES       | 970     | 10 | 453 | 0  | 0  | 0  | 464   | 2,818 | 0     | 1     | 1,759 | 366   | 6,841 |
|  | APPROACH %    | 68%     | 1% | 32% | 0% | 0% | 0% | 14%   | 86%   | 0%    | 0%    | 83%   | 17%   |       |
|  | APP/DEPART    | 1,433   | /  | 839 | 0  | /  | 0  | 3,282 | /     | 3,272 | 2,126 | /     | 2,730 | 0     |
|  | BEGIN PEAK HR | 4:00 PM |    |     | 0  | 0  | 0  | 182   | 1,402 | 0     | 0     | 904   | 169   | 3,506 |

|  |               |         |    |     |    |    |    |       |       |       |       |       |       |       |
|--|---------------|---------|----|-----|----|----|----|-------|-------|-------|-------|-------|-------|-------|
|  | APP/DEPART    | 849     | /  | 358 | 0  | /  | 0  | 1,584 | /     | 1,688 | 1,073 | /     | 1,460 | 0     |
|  | VOLUMES       | 970     | 10 | 453 | 0  | 0  | 0  | 464   | 2,818 | 0     | 1     | 1,759 | 366   | 6,841 |
|  | APPROACH %    | 68%     | 1% | 32% | 0% | 0% | 0% | 14%   | 86%   | 0%    | 0%    | 83%   | 17%   |       |
|  | APP/DEPART    | 1,433   | /  | 839 | 0  | /  | 0  | 3,282 | /     | 3,272 | 2,126 | /     | 2,730 | 0     |
|  | BEGIN PEAK HR | 4:00 PM |    |     | 0  | 0  | 0  | 182   | 1,402 | 0     | 0     | 904   | 169   | 3,506 |

|  |               |         |    |     |    |    |    |       |       |       |       |       |       |       |
|--|---------------|---------|----|-----|----|----|----|-------|-------|-------|-------|-------|-------|-------|
|  | APP/DEPART    | 849     | /  | 358 | 0  | /  | 0  | 1,584 | /     | 1,688 | 1,073 | /     | 1,460 | 0     |
|  | VOLUMES       | 970     | 10 | 453 | 0  | 0  | 0  | 464   | 2,818 | 0     | 1     | 1,759 | 366   | 6,841 |
|  | APPROACH %    | 68%     | 1% | 32% | 0% | 0% | 0% | 14%   | 86%   | 0%    | 0%    | 83%   | 17%   |       |
|  | APP/DEPART    | 1,433   | /  | 839 | 0  | /  | 0  | 3,282 | /     | 3,272 | 2,126 | /     | 2,730 | 0     |
|  | BEGIN PEAK HR | 4:00 PM |    |     | 0  | 0  | 0  | 182   | 1,402 | 0     | 0     | 904   | 169   | 3,506 |

|  |               |         |    |     |    |    |    |       |       |       |       |       |       |       |
|--|---------------|---------|----|-----|----|----|----|-------|-------|-------|-------|-------|-------|-------|
|  | APP/DEPART    | 849     | /  | 358 | 0  | /  | 0  | 1,584 | /     | 1,688 | 1,073 | /     | 1,460 | 0     |
|  | VOLUMES       | 970     | 10 | 453 | 0  | 0  | 0  | 464   | 2,818 | 0     | 1     | 1,759 | 366   | 6,841 |
|  | APPROACH %    | 68%     | 1% | 32% | 0% | 0% | 0% | 14%   | 86%   | 0%    | 0%    | 83%   | 17%   |       |
|  | APP/DEPART    | 1,433   | /  | 839 | 0  | /  | 0  | 3,282 | /     | 3,272 | 2,126 | /     | 2,730 | 0     |
|  | BEGIN PEAK HR | 4:00 PM |    |     | 0  | 0  | 0  | 182   | 1,402 | 0     | 0     | 904   | 169   | 3,506 |

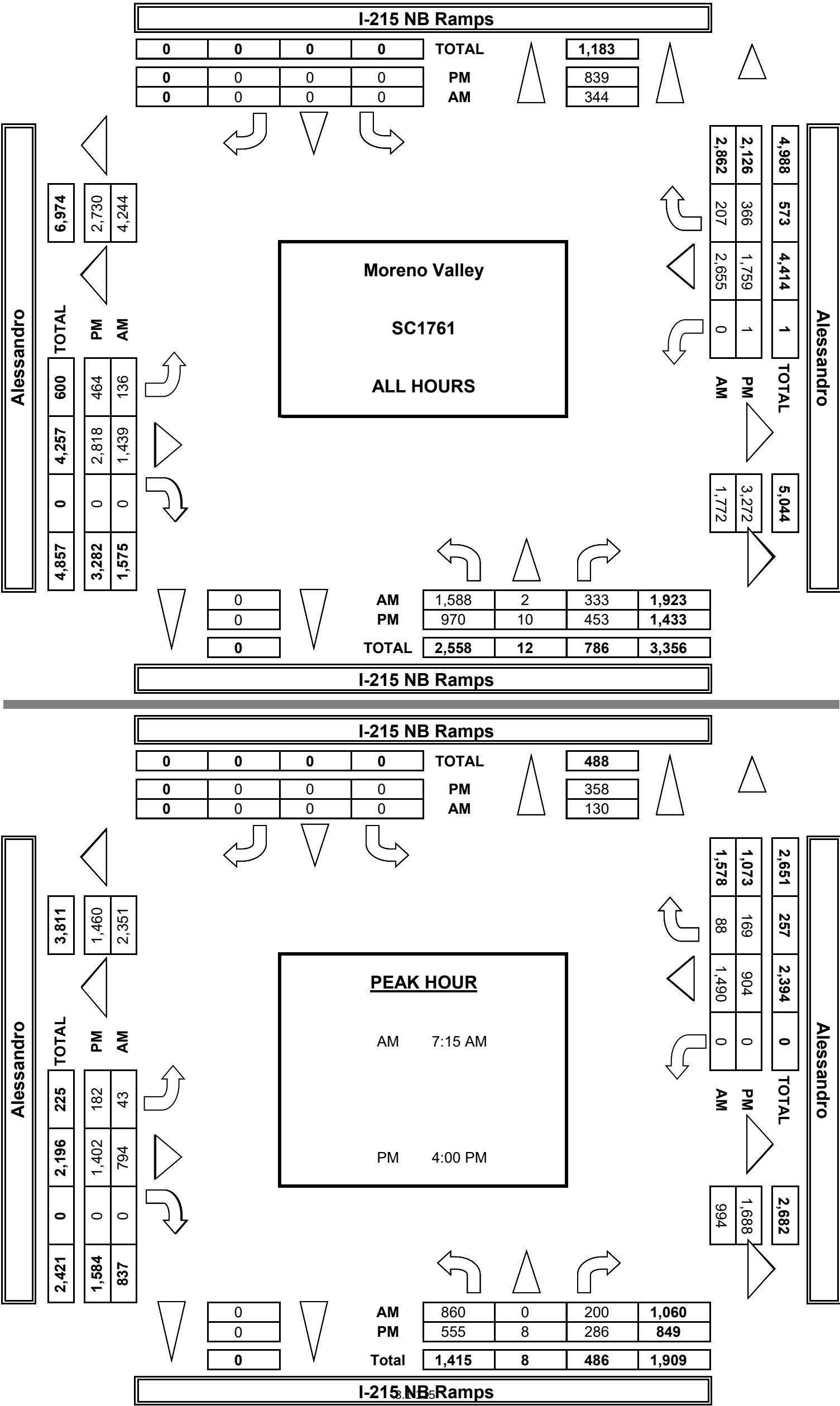
|  |               |         |    |     |    |    |    |       |       |       |       |       |       |       |
|--|---------------|---------|----|-----|----|----|----|-------|-------|-------|-------|-------|-------|-------|
|  | APP/DEPART    | 849     | /  | 358 | 0  | /  | 0  | 1,584 | /     | 1,688 | 1,073 | /     | 1,460 | 0     |
|  | VOLUMES       | 970     | 10 | 453 | 0  | 0  | 0  | 464   | 2,818 | 0     | 1     | 1,759 | 366   | 6,841 |
|  | APPROACH %    | 68%     | 1% | 32% | 0% | 0% | 0% | 14%   | 86%   | 0%    | 0%    | 83%   | 17%   |       |
|  | APP/DEPART    | 1,433   | /  | 839 | 0  | /  | 0  | 3,282 | /     | 3,272 | 2,126 | /     | 2,730 | 0     |
|  | BEGIN PEAK HR | 4:00 PM |    |     | 0  | 0  | 0  | 182   | 1,402 | 0     | 0     | 904   | 169   | 3,506 |

| U-TURNS |    |    |    |     |
|---------|----|----|----|-----|
| NB      | SB | EB | WB | TTL |
| 0       | 0  | 0  | 0  |     |

|   |   |   |   |   |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 |

|   |   |   |   |   |
|---|---|---|---|---|
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 |   |   |   |

AimTD LLC  
TURNING MOVEMENT COUNTS



## INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

|                               |                                             |                                               |                                       |                        |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|
| DATE:<br>5/23/18<br>WEDNESDAY | LOCATION:<br>NORTH & SOUTH:<br>EAST & WEST: | Moreno Valley<br>I-215 NB Ramps<br>Alessandro | PROJECT #:<br>LOCATION #:<br>CONTROL: | SC1761<br>13<br>SIGNAL |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|

|                       |               |       |     |   |     |
|-----------------------|---------------|-------|-----|---|-----|
| <b>CLASS 1:</b>       | <b>NOTES:</b> | AM    |     | ▲ |     |
| PASSENGER<br>VEHICLES |               | PM    |     | N |     |
|                       |               | MD    | ◀ W |   | E ▶ |
|                       |               | OTHER |     | S |     |
|                       |               | OTHER |     | ▼ |     |

|        | NORTHBOUND     |           |           | SOUTHBOUND     |         |         | EASTBOUND  |         |         | WESTBOUND  |         |         |       |
|--------|----------------|-----------|-----------|----------------|---------|---------|------------|---------|---------|------------|---------|---------|-------|
|        | I-215 NB Ramps |           |           | I-215 NB Ramps |         |         | Alessandro |         |         | Alessandro |         |         |       |
| LANES: | NL<br>1.3      | NT<br>0.3 | NR<br>1.3 | SL<br>X        | ST<br>X | SR<br>X | EL<br>1    | ET<br>3 | ER<br>X | WL<br>X    | WT<br>3 | WR<br>0 | TOTAL |

| U-TURNS |    |    |    |     |
|---------|----|----|----|-----|
| NB      | SB | EB | WB | TTL |

| RTOR     |          |          |          |
|----------|----------|----------|----------|
| NRR<br>0 | SRR<br>0 | ERR<br>0 | WRR<br>0 |

|                |            |       |     |       |    |    |       |       |       |       |       |       |       |       |
|----------------|------------|-------|-----|-------|----|----|-------|-------|-------|-------|-------|-------|-------|-------|
| AM             | 7:00 AM    | 201   | 0   | 14    | 0  | 0  | 0     | 12    | 112   | 0     | 0     | 404   | 24    | 767   |
|                | 7:15 AM    | 208   | 0   | 25    | 0  | 0  | 0     | 5     | 143   | 0     | 0     | 401   | 18    | 800   |
|                | 7:30 AM    | 205   | 0   | 44    | 0  | 0  | 0     | 6     | 181   | 0     | 0     | 350   | 16    | 802   |
|                | 7:45 AM    | 188   | 0   | 51    | 0  | 0  | 0     | 6     | 195   | 0     | 0     | 336   | 5     | 781   |
|                | 8:00 AM    | 203   | 0   | 66    | 0  | 0  | 0     | 10    | 185   | 0     | 0     | 310   | 12    | 786   |
|                | 8:15 AM    | 141   | 0   | 28    | 0  | 0  | 0     | 15    | 184   | 0     | 0     | 295   | 24    | 687   |
|                | 8:30 AM    | 192   | 1   | 36    | 0  | 0  | 0     | 26    | 157   | 0     | 0     | 213   | 24    | 649   |
|                | 8:45 AM    | 146   | 0   | 45    | 0  | 0  | 0     | 24    | 113   | 0     | 0     | 172   | 16    | 516   |
|                | 9:00 AM    | 0     | 0   | 0     | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                | 9:15 AM    | 0     | 0   | 0     | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                | 9:30 AM    | 0     | 0   | 0     | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                | 9:45 AM    | 0     | 0   | 0     | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
|                | VOLUMES    | 1,484 | 1   | 309   | 0  | 0  | 0     | 104   | 1,270 | 0     | 0     | 2,481 | 139   | 5,788 |
|                | APPROACH % | 83%   | 0%  | 17%   | 0% | 0% | 0%    | 8%    | 92%   | 0%    | 0%    | 95%   | 5%    |       |
| APP/DEPART     | 1,794      | /     | 243 | 0     | /  | 0  | 1,374 | /     | 1,579 | 2,620 | /     | 3,966 | 0     |       |
| BEGIN PEAK HR  | 7:15 AM    |       |     |       |    |    |       |       |       |       |       |       |       |       |
| VOLUMES        | 804        | 0     | 186 | 0     | 0  | 0  | 26    | 704   | 0     | 0     | 1,397 | 51    | 3,169 |       |
| APPROACH %     | 81%        | 0%    | 19% | 0%    | 0% | 0% | 4%    | 96%   | 0%    | 0%    | 96%   | 4%    |       |       |
| PEAK HR FACTOR | 0.920      |       |     | 0.000 |    |    | 0.909 |       |       | 0.864 |       |       | 0.988 |       |
| APP/DEPART     | 990        | /     | 77  | 0     | /  | 0  | 731   | /     | 890   | 1,448 | /     | 2,202 | 0     |       |
| PM             | 03:00 PM   | 0     | 0   | 0     | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |
|                | 3:15 PM    | 0     | 0   | 0     | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |
|                | 3:30 PM    | 0     | 0   | 0     | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |
|                | 3:45 PM    | 0     | 0   | 0     | 0  | 0  | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |
|                | 4:00 PM    | 158   | 8   | 92    | 0  | 0  | 0     | 25    | 328   | 0     | 0     | 229   | 26    | 866   |
|                | 4:15 PM    | 122   | 0   | 74    | 0  | 0  | 0     | 36    | 367   | 0     | 0     | 210   | 40    | 849   |
|                | 4:30 PM    | 129   | 0   | 53    | 0  | 0  | 0     | 55    | 303   | 0     | 0     | 227   | 37    | 804   |
|                | 4:45 PM    | 105   | 0   | 48    | 0  | 0  | 0     | 57    | 322   | 0     | 0     | 205   | 34    | 771   |
|                | 5:00 PM    | 105   | 1   | 29    | 0  | 0  | 0     | 81    | 348   | 0     | 0     | 220   | 47    | 831   |
|                | 5:15 PM    | 110   | 0   | 33    | 0  | 0  | 0     | 49    | 352   | 0     | 1     | 192   | 26    | 763   |
|                | 5:30 PM    | 89    | 0   | 49    | 0  | 0  | 0     | 69    | 322   | 0     | 0     | 224   | 56    | 809   |
|                | 5:45 PM    | 83    | 0   | 43    | 0  | 0  | 0     | 72    | 336   | 0     | 0     | 192   | 40    | 766   |
|                | VOLUMES    | 901   | 9   | 421   | 0  | 0  | 0     | 444   | 2,678 | 0     | 1     | 1,699 | 306   | 6,459 |
|                | APPROACH % | 68%   | 1%  | 32%   | 0% | 0% | 0%    | 14%   | 86%   | 0%    | 0%    | 85%   | 15%   |       |
| APP/DEPART     | 1,331      | /     | 758 | 0     | /  | 0  | 3,122 | /     | 3,100 | 2,006 | /     | 2,601 | 0     |       |
| BEGIN PEAK HR  | 4:00 PM    |       |     |       |    |    |       |       |       |       |       |       |       |       |
| VOLUMES        | 514        | 8     | 267 | 0     | 0  | 0  | 172   | 1,320 | 0     | 0     | 871   | 137   | 3,290 |       |
| APPROACH %     | 65%        | 1%    | 34% | 0%    | 0% | 0% | 12%   | 88%   | 0%    | 0%    | 86%   | 14%   |       |       |
| PEAK HR FACTOR | 0.765      |       |     | 0.000 |    |    | 0.926 |       |       | 0.955 |       |       | 0.950 |       |
| APP/DEPART     | 789        | /     | 317 | 0     | /  | 0  | 1,493 | /     | 1,587 | 1,008 | /     | 1,386 | 0     |       |

[illegible]

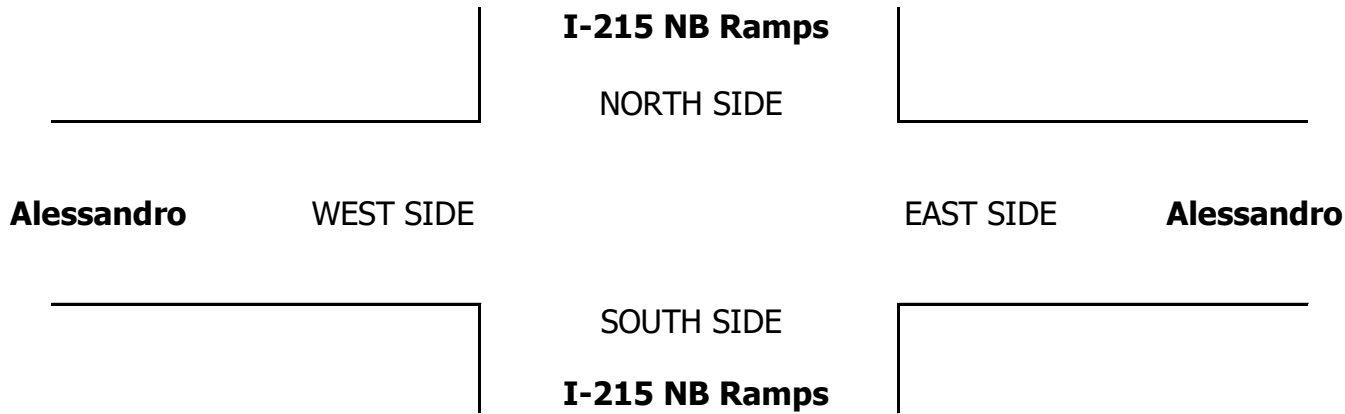
|     |   |   |    |
|-----|---|---|----|
| 7   | 0 | 0 | 5  |
| 15  | 0 | 0 | 7  |
| 21  | 0 | 0 | 5  |
| 18  | 0 | 0 | 0  |
| 32  | 0 | 0 | 5  |
| 15  | 0 | 0 | 4  |
| 23  | 0 | 0 | 3  |
| 30  | 0 | 0 | 4  |
| 0   | 0 | 0 | 0  |
| 0   | 0 | 0 | 0  |
| 0   | 0 | 0 | 0  |
| 0   | 0 | 0 | 0  |
| 161 | 0 | 0 | 33 |

|    |   |   |    |
|----|---|---|----|
| 86 | 0 | 0 | 17 |
|----|---|---|----|

|   |   |   |   |   |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 | 2 |

|     |   |   |    |
|-----|---|---|----|
| 0   | 0 | 0 | 0  |
| 0   | 0 | 0 | 0  |
| 0   | 0 | 0 | 0  |
| 0   | 0 | 0 | 0  |
| 26  | 0 | 0 | 4  |
| 17  | 0 | 0 | 11 |
| 18  | 0 | 0 | 11 |
| 23  | 0 | 0 | 13 |
| 15  | 0 | 0 | 11 |
| 13  | 0 | 0 | 11 |
| 19  | 0 | 0 | 22 |
| 17  | 0 | 0 | 8  |
| 148 | 0 | 0 | 91 |

|    |   |   |    |
|----|---|---|----|
| 84 | 0 | 0 | 39 |
|----|---|---|----|



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

|                               |                                             |                                               |                                       |                        |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|
| DATE:<br>5/23/18<br>WEDNESDAY | LOCATION:<br>NORTH & SOUTH:<br>EAST & WEST: | Moreno Valley<br>I-215 NB Ramps<br>Alessandro | PROJECT #:<br>LOCATION #:<br>CONTROL: | SC1761<br>13<br>SIGNAL |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|

|                                                   |        |                                  |                                |                        |
|---------------------------------------------------|--------|----------------------------------|--------------------------------|------------------------|
| CLASS 2:<br>2-AXLE<br>WORK<br>VEHICLES/<br>TRUCKS | NOTES: | AM<br>PM<br>MD<br>OTHER<br>OTHER | <div>▲<br/>N<br/>S<br/>▼</div> | <div>◀ W<br/>E ▶</div> |
|---------------------------------------------------|--------|----------------------------------|--------------------------------|------------------------|

|        |                |           |           |                |         |         |            |         |         |            |         |         |       |
|--------|----------------|-----------|-----------|----------------|---------|---------|------------|---------|---------|------------|---------|---------|-------|
|        | NORTHBOUND     |           |           | SOUTHBOUND     |         |         | EASTBOUND  |         |         | WESTBOUND  |         |         |       |
|        | I-215 NB Ramps |           |           | I-215 NB Ramps |         |         | Alessandro |         |         | Alessandro |         |         |       |
| LANES: | NL<br>1.3      | NT<br>0.3 | NR<br>1.3 | SL<br>X        | ST<br>X | SR<br>X | EL<br>1    | ET<br>3 | ER<br>X | WL<br>X    | WT<br>3 | WR<br>0 | TOTAL |

|    |                |         |    |     |       |    |    |       |     |     |       |     |     |       |
|----|----------------|---------|----|-----|-------|----|----|-------|-----|-----|-------|-----|-----|-------|
| AM | 7:00 AM        | 7       | 0  | 0   | 0     | 0  | 0  | 1     | 11  | 0   | 0     | 18  | 1   | 38    |
|    | 7:15 AM        | 7       | 0  | 2   | 0     | 0  | 0  | 3     | 11  | 0   | 0     | 15  | 1   | 39    |
|    | 7:30 AM        | 9       | 0  | 2   | 0     | 0  | 0  | 0     | 22  | 0   | 0     | 17  | 2   | 52    |
|    | 7:45 AM        | 8       | 0  | 2   | 0     | 0  | 0  | 3     | 11  | 0   | 0     | 24  | 3   | 51    |
|    | 8:00 AM        | 9       | 0  | 3   | 0     | 0  | 0  | 2     | 13  | 0   | 0     | 9   | 8   | 44    |
|    | 8:15 AM        | 7       | 0  | 5   | 0     | 0  | 0  | 3     | 12  | 0   | 0     | 9   | 3   | 39    |
|    | 8:30 AM        | 7       | 0  | 0   | 0     | 0  | 0  | 1     | 10  | 0   | 0     | 14  | 3   | 35    |
|    | 8:45 AM        | 10      | 1  | 2   | 0     | 0  | 0  | 1     | 9   | 0   | 0     | 11  | 2   | 36    |
|    | 9:00 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0   | 0     | 0   | 0   | 0     |
|    | 9:15 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0   | 0     | 0   | 0   | 0     |
|    | 9:30 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0   | 0     | 0   | 0   | 0     |
|    | 9:45 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0   | 0     | 0   | 0   | 0     |
|    | VOLUMES        | 64      | 1  | 16  | 0     | 0  | 0  | 14    | 99  | 0   | 0     | 117 | 23  | 334   |
|    | APPROACH %     | 79%     | 1% | 20% | 0%    | 0% | 0% | 12%   | 88% | 0%  | 0%    | 84% | 16% |       |
| PM | APP/DEPART     | 81      | /  | 38  | 0     | /  | 0  | 113   | /   | 115 | 140   | /   | 181 | 0     |
|    | BEGIN PEAK HR  | 7:15 AM |    |     |       |    |    |       |     |     |       |     |     |       |
|    | VOLUMES        | 33      | 0  | 12  | 0     | 0  | 0  | 8     | 58  | 0   | 0     | 59  | 16  | 186   |
|    | APPROACH %     | 73%     | 0% | 27% | 0%    | 0% | 0% | 12%   | 88% | 0%  | 0%    | 79% | 21% |       |
|    | PEAK HR FACTOR | 0.938   |    |     | 0.000 |    |    | 0.750 |     |     | 0.694 |     |     | 0.894 |
|    | APP/DEPART     | 45      | /  | 24  | 0     | /  | 0  | 66    | /   | 70  | 75    | /   | 92  | 0     |
|    | 03:00 PM       | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0   | 0     | 0   | 0   | 0     |
|    | 3:15 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0   | 0     | 0   | 0   | 0     |
|    | 3:30 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0   | 0     | 0   | 0   | 0     |
|    | 3:45 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0   | 0     | 0   | 0   | 0     |
|    | 4:00 PM        | 12      | 0  | 4   | 0     | 0  | 0  | 1     | 17  | 0   | 0     | 5   | 5   | 44    |
|    | 4:15 PM        | 6       | 0  | 6   | 0     | 0  | 0  | 3     | 14  | 0   | 0     | 9   | 5   | 43    |
|    | 4:30 PM        | 6       | 0  | 6   | 0     | 0  | 0  | 0     | 11  | 0   | 0     | 4   | 4   | 31    |
|    | 4:45 PM        | 5       | 0  | 2   | 0     | 0  | 0  | 2     | 16  | 0   | 0     | 6   | 6   | 37    |
|    | 5:00 PM        | 8       | 0  | 1   | 0     | 0  | 0  | 1     | 2   | 0   | 0     | 7   | 5   | 24    |
|    | 5:15 PM        | 9       | 1  | 4   | 0     | 0  | 0  | 2     | 10  | 0   | 0     | 2   | 4   | 32    |
|    | 5:30 PM        | 2       | 0  | 2   | 0     | 0  | 0  | 2     | 17  | 0   | 0     | 2   | 2   | 27    |
|    | 5:45 PM        | 3       | 0  | 3   | 0     | 0  | 0  | 1     | 8   | 0   | 0     | 8   | 3   | 26    |
|    | VOLUMES        | 51      | 1  | 28  | 0     | 0  | 0  | 12    | 95  | 0   | 0     | 43  | 34  | 264   |
|    | APPROACH %     | 64%     | 1% | 35% | 0%    | 0% | 0% | 11%   | 89% | 0%  | 0%    | 56% | 44% |       |
|    | APP/DEPART     | 80      | /  | 47  | 0     | /  | 0  | 107   | /   | 123 | 77    | /   | 94  | 0     |
|    | BEGIN PEAK HR  | 4:00 PM |    |     |       |    |    |       |     |     |       |     |     |       |
|    | VOLUMES        | 29      | 0  | 18  | 0     | 0  | 0  | 6     | 58  | 0   | 0     | 24  | 20  | 155   |
|    | APPROACH %     | 62%     | 0% | 38% | 0%    | 0% | 0% | 9%    | 91% | 0%  | 0%    | 55% | 45% |       |
|    | PEAK HR FACTOR | 0.734   |    |     | 0.000 |    |    | 0.889 |     |     | 0.786 |     |     | 0.881 |
|    | APP/DEPART     | 47      | /  | 26  | 0     | /  | 0  | 64    | /   | 76  | 44    | /   | 53  | 0     |

|         |    |    |    |     |
|---------|----|----|----|-----|
| U-TURNS |    |    |    |     |
| NB      | SB | EB | WB | TTL |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |

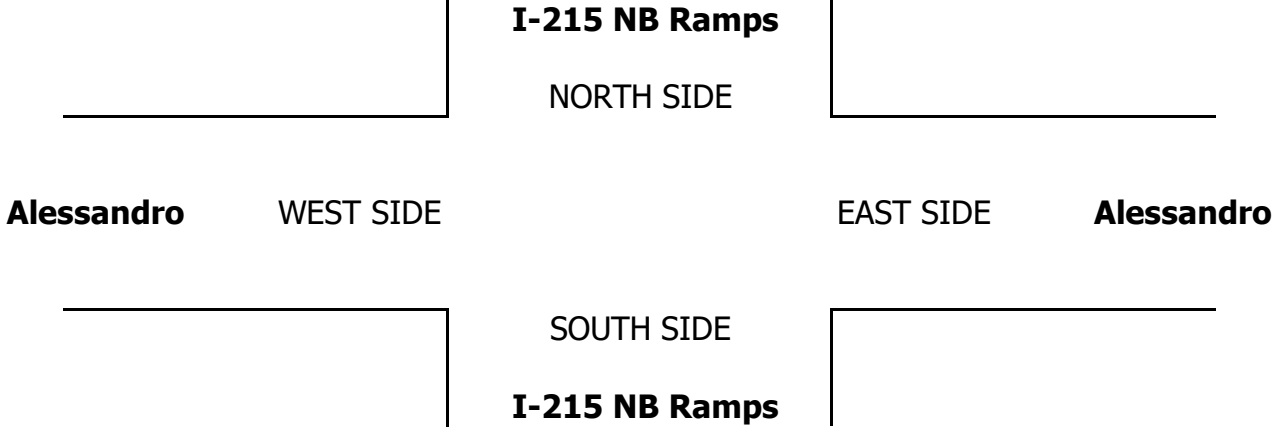
|          |          |          |          |
|----------|----------|----------|----------|
| RTOR     |          |          |          |
| NRR<br>0 | SRR<br>0 | ERR<br>0 | WRR<br>0 |
| 0        | 0        | 0        | 0        |
| 2        | 0        | 0        | 0        |
| 1        | 0        | 0        | 0        |
| 0        | 0        | 0        | 0        |
| 0        | 0        | 0        | 2        |
| 4        | 0        | 0        | 0        |
| 0        | 0        | 0        | 0        |
| 2        | 0        | 0        | 0        |
| 0        | 0        | 0        | 0        |
| 0        | 0        | 0        | 0        |
| 0        | 0        | 0        | 0        |
| 0        | 0        | 0        | 0        |
| 0        | 0        | 0        | 0        |
| 9        | 0        | 0        | 2        |

|   |   |   |   |
|---|---|---|---|
| 5 | 0 | 0 | 2 |
|---|---|---|---|

|   |   |   |   |   |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |

|    |   |   |    |
|----|---|---|----|
| 0  | 0 | 0 | 0  |
| 0  | 0 | 0 | 0  |
| 0  | 0 | 0 | 0  |
| 0  | 0 | 0 | 0  |
| 1  | 0 | 0 | 2  |
| 0  | 0 | 0 | 1  |
| 2  | 0 | 0 | 0  |
| 1  | 0 | 0 | 2  |
| 0  | 0 | 0 | 2  |
| 3  | 0 | 0 | 3  |
| 1  | 0 | 0 | 1  |
| 2  | 0 | 0 | 2  |
| 10 | 0 | 0 | 13 |

|   |   |   |   |
|---|---|---|---|
| 4 | 0 | 0 | 5 |
|---|---|---|---|



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:  
5/23/18  
WEDNESDAY

LOCATION:  
NORTH & SOUTH:  
EAST & WEST:

Moreno Valley  
I-215 NB Ramps  
Alessandro

PROJECT #:  
LOCATION #:  
CONTROL:

SC1761  
13  
SIGNAL

CLASS 3:  
3-AXLE  
TRUCKS

NOTES:

AM  
PM  
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OTHER  
OTHER

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|        | NORTHBOUND     |     |     | SOUTHBOUND     |    |    | EASTBOUND  |    |    | WESTBOUND  |    |    |       |
|--------|----------------|-----|-----|----------------|----|----|------------|----|----|------------|----|----|-------|
|        | I-215 NB Ramps |     |     | I-215 NB Ramps |    |    | Alessandro |    |    | Alessandro |    |    |       |
| LANES: | NL             | NT  | NR  | SL             | ST | SR | EL         | ET | ER | WL         | WT | WR | TOTAL |
|        | 1.3            | 0.3 | 1.3 | X              | X  | X  | 1          | 3  | X  | X          | 3  | 0  |       |

|    |                |         |    |     |       |    |    |       |     |    |       |     |     |       |
|----|----------------|---------|----|-----|-------|----|----|-------|-----|----|-------|-----|-----|-------|
| AM | 7:00 AM        | 1       | 0  | 0   | 0     | 0  | 0  | 1     | 0   | 0  | 0     | 2   | 0   | 4     |
|    | 7:15 AM        | 2       | 0  | 0   | 0     | 0  | 0  | 0     | 3   | 0  | 0     | 4   | 0   | 9     |
|    | 7:30 AM        | 1       | 0  | 0   | 0     | 0  | 0  | 0     | 1   | 0  | 0     | 4   | 0   | 6     |
|    | 7:45 AM        | 0       | 0  | 1   | 0     | 0  | 0  | 0     | 1   | 0  | 0     | 1   | 3   | 6     |
|    | 8:00 AM        | 2       | 0  | 1   | 0     | 0  | 0  | 1     | 2   | 0  | 0     | 0   | 2   | 8     |
|    | 8:15 AM        | 2       | 0  | 1   | 0     | 0  | 0  | 1     | 0   | 0  | 0     | 4   | 0   | 8     |
|    | 8:30 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 2     | 1   | 0  | 0     | 1   | 0   | 4     |
|    | 8:45 AM        | 2       | 0  | 0   | 0     | 0  | 0  | 0     | 1   | 0  | 0     | 1   | 0   | 4     |
|    | 9:00 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 9:15 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 9:30 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 9:45 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | VOLUMES        | 10      | 0  | 3   | 0     | 0  | 0  | 5     | 9   | 0  | 0     | 17  | 5   | 49    |
|    | APPROACH %     | 77%     | 0% | 23% | 0%    | 0% | 0% | 36%   | 64% | 0% | 0%    | 77% | 23% |       |
|    | APP/DEPART     | 13      | /  | 10  | 0     | /  | 0  | 14    | /   | 12 | 22    | /   | 27  | 0     |
| PM | BEGIN PEAK HR  | 7:15 AM |    |     |       |    |    |       |     |    |       |     |     |       |
|    | VOLUMES        | 5       | 0  | 2   | 0     | 0  | 0  | 1     | 7   | 0  | 0     | 9   | 5   | 29    |
|    | APPROACH %     | 71%     | 0% | 29% | 0%    | 0% | 0% | 13%   | 88% | 0% | 0%    | 64% | 36% |       |
|    | PEAK HR FACTOR | 0.583   |    |     | 0.000 |    |    | 0.667 |     |    | 0.875 |     |     | 0.806 |
|    | APP/DEPART     | 7       | /  | 6   | 0     | /  | 0  | 8     | /   | 9  | 14    | /   | 14  | 0     |
|    | 03:00 PM       | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 3:15 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 3:30 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 3:45 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 4:00 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 1   | 0  | 0     | 1   | 0   | 2     |
|    | 4:15 PM        | 1       | 0  | 0   | 0     | 0  | 0  | 0     | 1   | 0  | 0     | 1   | 0   | 3     |
|    | 4:30 PM        | 1       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 1     |
|    | 4:45 PM        | 1       | 0  | 0   | 0     | 0  | 0  | 0     | 1   | 0  | 0     | 0   | 1   | 3     |
|    | 5:00 PM        | 1       | 0  | 0   | 0     | 0  | 0  | 1     | 1   | 0  | 0     | 2   | 0   | 5     |
|    | 5:15 PM        | 0       | 0  | 1   | 0     | 0  | 0  | 0     | 2   | 0  | 0     | 0   | 0   | 3     |
|    | 5:30 PM        | 1       | 0  | 0   | 0     | 0  | 0  | 0     | 1   | 0  | 0     | 2   | 1   | 5     |
|    | 5:45 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 1   | 0   | 1     |
|    | VOLUMES        | 5       | 0  | 1   | 0     | 0  | 0  | 1     | 7   | 0  | 0     | 7   | 2   | 23    |
|    | APPROACH %     | 83%     | 0% | 17% | 0%    | 0% | 0% | 13%   | 88% | 0% | 0%    | 78% | 22% |       |
|    | APP/DEPART     | 6       | /  | 3   | 0     | /  | 0  | 8     | /   | 8  | 9     | /   | 12  | 0     |
|    | BEGIN PEAK HR  | 4:45 PM |    |     |       |    |    |       |     |    |       |     |     |       |
|    | VOLUMES        | 3       | 0  | 1   | 0     | 0  | 0  | 1     | 5   | 0  | 0     | 4   | 2   | 16    |
|    | APPROACH %     | 75%     | 0% | 25% | 0%    | 0% | 0% | 17%   | 83% | 0% | 0%    | 67% | 33% |       |
|    | PEAK HR FACTOR | 1.000   |    |     | 0.000 |    |    | 0.750 |     |    | 0.500 |     |     | 0.800 |
|    | APP/DEPART     | 4       | /  | 3   | 0     | /  | 0  | 6     | /   | 6  | 6     | /   | 7   | 0     |

| U-TURNS |    |    |    |     |
|---------|----|----|----|-----|
| NB      | SB | EB | WB | TTL |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |

| RTOR |     |     |     |
|------|-----|-----|-----|
| NRR  | SRR | ERR | WRR |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 1    | 0   | 0   | 1   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 2    | 0   | 0   | 1   |

|   |   |   |   |
|---|---|---|---|
| 1 | 0 | 0 | 1 |
|---|---|---|---|

|   |   |   |   |   |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
|---|---|---|---|

I-215 NB Ramps

NORTH SIDE

Alessandro

WEST SIDE

EAST SIDE

Alessandro

SOUTH SIDE

I-215 NB Ramps

3.1-118

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

|                               |                                             |                                               |                                       |                        |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|
| DATE:<br>5/23/18<br>WEDNESDAY | LOCATION:<br>NORTH & SOUTH:<br>EAST & WEST: | Moreno Valley<br>I-215 NB Ramps<br>Alessandro | PROJECT #:<br>LOCATION #:<br>CONTROL: | SC1761<br>13<br>SIGNAL |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|

|                                         |        |                                  |     |                      |     |
|-----------------------------------------|--------|----------------------------------|-----|----------------------|-----|
| CLASS 4:<br>4 OR MORE<br>AXLE<br>TRUCKS | NOTES: | AM<br>PM<br>MD<br>OTHER<br>OTHER |     | ▲<br>N<br><br>S<br>▼ |     |
|                                         |        |                                  | ◀ W |                      | E ▶ |

|        | NORTHBOUND     |     |     | SOUTHBOUND     |    |    | EASTBOUND  |    |    | WESTBOUND  |    |    |       |
|--------|----------------|-----|-----|----------------|----|----|------------|----|----|------------|----|----|-------|
|        | I-215 NB Ramps |     |     | I-215 NB Ramps |    |    | Alessandro |    |    | Alessandro |    |    |       |
| LANES: | NL             | NT  | NR  | SL             | ST | SR | EL         | ET | ER | WL         | WT | WR | TOTAL |
|        | 1.3            | 0.3 | 1.3 | X              | X  | X  | 1          | 3  | X  | X          | 3  | 0  |       |

| U-TURNS |    |    |    |     |
|---------|----|----|----|-----|
| NB      | SB | EB | WB | TTL |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |

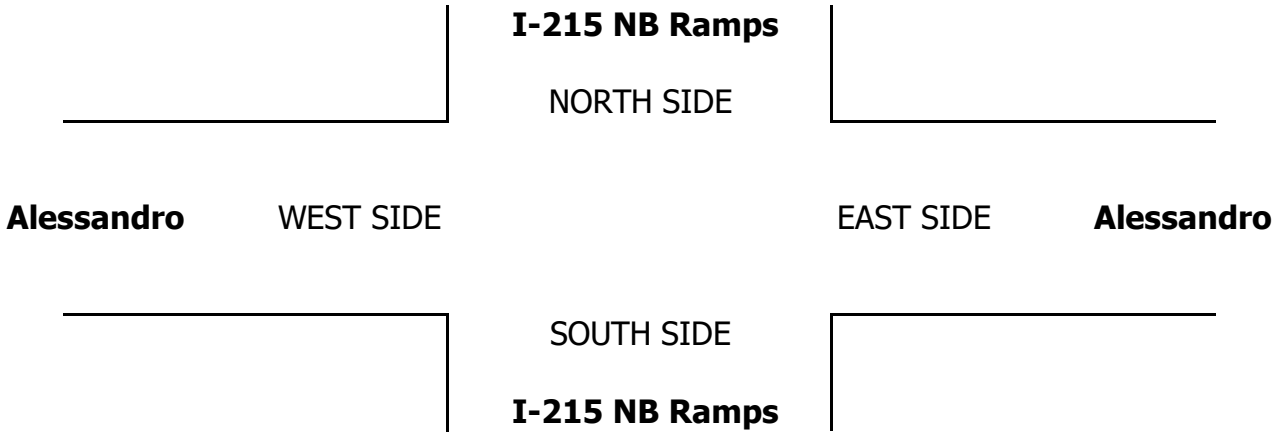
| RTOR |     |     |     |
|------|-----|-----|-----|
| NRR  | SRR | ERR | WRR |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 1    | 0   | 0   | 5   |

|    |                |         |    |     |       |    |    |       |     |    |       |     |     |       |
|----|----------------|---------|----|-----|-------|----|----|-------|-----|----|-------|-----|-----|-------|
| AM | 7:00 AM        | 1       | 0  | 0   | 0     | 0  | 0  | 3     | 17  | 0  | 0     | 3   | 4   | 28    |
|    | 7:15 AM        | 2       | 0  | 0   | 0     | 0  | 0  | 1     | 9   | 0  | 0     | 5   | 5   | 22    |
|    | 7:30 AM        | 6       | 0  | 1   | 0     | 0  | 0  | 3     | 3   | 0  | 0     | 3   | 3   | 19    |
|    | 7:45 AM        | 4       | 0  | 0   | 0     | 0  | 0  | 2     | 5   | 0  | 0     | 3   | 6   | 20    |
|    | 8:00 AM        | 5       | 0  | 2   | 0     | 0  | 0  | 1     | 5   | 0  | 0     | 3   | 4   | 20    |
|    | 8:15 AM        | 4       | 0  | 0   | 0     | 0  | 0  | 2     | 8   | 0  | 0     | 3   | 4   | 21    |
|    | 8:30 AM        | 3       | 0  | 1   | 0     | 0  | 0  | 1     | 4   | 0  | 0     | 3   | 6   | 18    |
|    | 8:45 AM        | 2       | 0  | 1   | 0     | 0  | 0  | 0     | 5   | 0  | 0     | 8   | 8   | 24    |
|    | 9:00 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 9:15 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 9:30 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 9:45 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | VOLUMES        | 27      | 0  | 5   | 0     | 0  | 0  | 13    | 56  | 0  | 0     | 31  | 40  | 172   |
|    | APPROACH %     | 84%     | 0% | 16% | 0%    | 0% | 0% | 19%   | 81% | 0% | 0%    | 44% | 56% |       |
| PM | APP/DEPART     | 32      | /  | 53  | 0     | /  | 0  | 69    | /   | 61 | 71    | /   | 58  | 0     |
|    | BEGIN PEAK HR  | 7:00 AM |    |     |       |    |    |       |     |    |       |     |     |       |
|    | VOLUMES        | 13      | 0  | 1   | 0     | 0  | 0  | 9     | 34  | 0  | 0     | 14  | 18  | 89    |
|    | APPROACH %     | 93%     | 0% | 7%  | 0%    | 0% | 0% | 21%   | 79% | 0% | 0%    | 44% | 56% |       |
|    | PEAK HR FACTOR | 0.500   |    |     | 0.000 |    |    | 0.538 |     |    | 0.800 |     |     | 0.795 |
|    | APP/DEPART     | 14      | /  | 27  | 0     | /  | 0  | 43    | /   | 35 | 32    | /   | 27  | 0     |
|    | 03:00 PM       | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 3:15 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 3:30 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 3:45 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0   | 0  | 0     | 0   | 0   | 0     |
|    | 4:00 PM        | 3       | 0  | 1   | 0     | 0  | 0  | 1     | 6   | 0  | 0     | 3   | 2   | 16    |
|    | 4:15 PM        | 2       | 0  | 0   | 0     | 0  | 0  | 2     | 7   | 0  | 0     | 1   | 6   | 18    |
|    | 4:30 PM        | 2       | 0  | 0   | 0     | 0  | 0  | 0     | 2   | 0  | 0     | 0   | 2   | 6     |
|    | 4:45 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 4   | 0  | 0     | 0   | 1   | 5     |
|    | 5:00 PM        | 1       | 0  | 0   | 0     | 0  | 0  | 1     | 4   | 0  | 0     | 0   | 2   | 8     |
|    | 5:15 PM        | 2       | 0  | 0   | 0     | 0  | 0  | 1     | 2   | 0  | 0     | 1   | 6   | 12    |
|    | 5:30 PM        | 1       | 0  | 1   | 0     | 0  | 0  | 1     | 5   | 0  | 0     | 0   | 2   | 10    |
|    | 5:45 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 1     | 3   | 0  | 0     | 1   | 3   | 8     |
|    | VOLUMES        | 11      | 0  | 2   | 0     | 0  | 0  | 7     | 33  | 0  | 0     | 6   | 24  | 83    |
|    | APPROACH %     | 85%     | 0% | 15% | 0%    | 0% | 0% | 18%   | 83% | 0% | 0%    | 20% | 80% |       |
|    | APP/DEPART     | 13      | /  | 31  | 0     | /  | 0  | 40    | /   | 35 | 30    | /   | 17  | 0     |
|    | BEGIN PEAK HR  | 4:00 PM |    |     |       |    |    |       |     |    |       |     |     |       |
|    | VOLUMES        | 7       | 0  | 1   | 0     | 0  | 0  | 3     | 19  | 0  | 0     | 4   | 11  | 45    |
|    | APPROACH %     | 88%     | 0% | 13% | 0%    | 0% | 0% | 14%   | 86% | 0% | 0%    | 27% | 73% |       |
|    | PEAK HR FACTOR | 0.500   |    |     | 0.000 |    |    | 0.611 |     |    | 0.536 |     |     | 0.625 |
|    | APP/DEPART     | 8       | /  | 14  | 0     | /  | 0  | 22    | /   | 20 | 15    | /   | 11  | 0     |

|   |   |   |   |   |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 5 |

|   |   |   |   |
|---|---|---|---|
| 0 | 0 | 0 | 2 |
|---|---|---|---|



INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:  
5/23/18  
WEDNESDAY

LOCATION:  
NORTH & SOUTH:  
EAST & WEST:

Moreno Valley  
I-215 NB Ramps  
Alessandro

PROJECT #:  
LOCATION #:  
CONTROL:

SC1761  
13  
SIGNAL

CLASS 5:

RV

NOTES:

AM  
PM  
MD  
OTHER  
OTHER

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◀ W  
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E ▶

|        | NORTHBOUND     |     |     | SOUTHBOUND     |    |    | EASTBOUND  |    |    | WESTBOUND  |    |    |       |
|--------|----------------|-----|-----|----------------|----|----|------------|----|----|------------|----|----|-------|
|        | I-215 NB Ramps |     |     | I-215 NB Ramps |    |    | Alessandro |    |    | Alessandro |    |    |       |
| LANES: | NL             | NT  | NR  | SL             | ST | SR | EL         | ET | ER | WL         | WT | WR | TOTAL |
|        | 1.3            | 0.3 | 1.3 | X              | X  | X  | 1          | 3  | X  | X          | 3  | 0  |       |

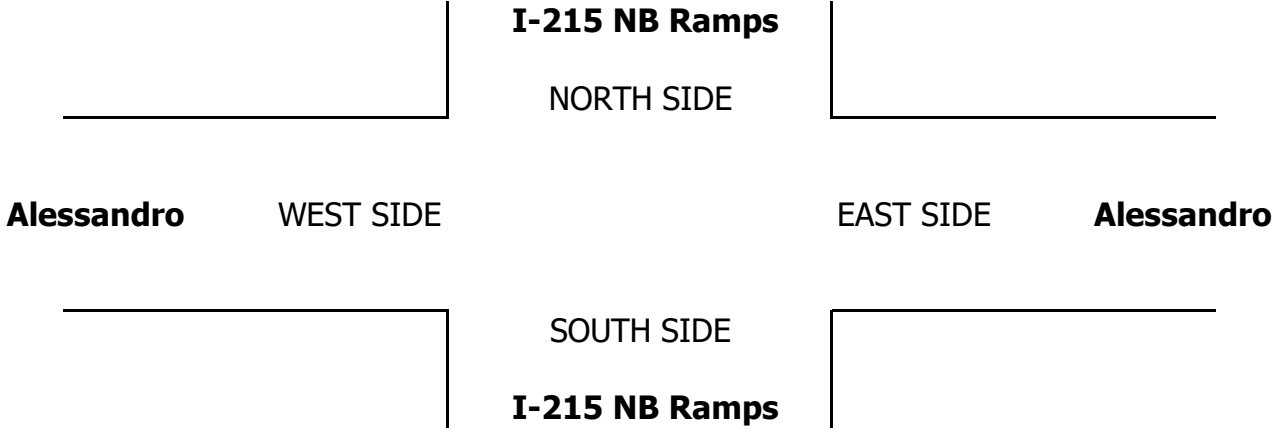
| U-TURNS |    |    |    |     |
|---------|----|----|----|-----|
| NB      | SB | EB | WB | TTL |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |

| RTOR |     |     |     |
|------|-----|-----|-----|
| NRR  | SRR | ERR | WRR |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |
| 0    | 0   | 0   | 0   |

|    |                |         |    |    |       |    |    |       |    |    |       |    |   |
|----|----------------|---------|----|----|-------|----|----|-------|----|----|-------|----|---|
| AM | 7:00 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 7:15 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 7:30 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 1     | 0  | 0  | 0     | 0  | 1 |
|    | 7:45 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 8:00 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 8:15 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 8:30 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 8:45 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 9:00 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 9:15 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 9:30 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 9:45 AM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0  | 1     | 0  | 0  | 0     | 0  | 1 |
|    | APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0% | 100%  | 0% | 0% | 0%    | 0% |   |
|    | APP/DEPART     | 0       | /  | 0  | 0     | /  | 0  | 1     | /  | 1  | 0     | /  | 0 |
| PM | BEGIN PEAK HR  | 7:00 AM |    |    |       |    |    |       |    |    |       |    |   |
|    | VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0  | 1     | 0  | 0  | 0     | 0  | 1 |
|    | APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0% | 100%  | 0% | 0% | 0%    | 0% |   |
|    | PEAK HR FACTOR | 0.000   |    |    | 0.000 |    |    | 0.250 |    |    | 0.000 |    |   |
|    | APP/DEPART     | 0       | /  | 0  | 0     | /  | 0  | 1     | /  | 1  | 0     | /  | 0 |
|    | 03:00 PM       | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 3:15 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 3:30 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 3:45 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 4:00 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 1     | 0  | 1 |
|    | 4:15 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 4:30 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 4:45 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 5:00 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 5:15 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 5:30 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | 5:45 PM        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0 |
|    | VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 1     | 0  | 1 |
|    | APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0% | 0%    | 0% | 0% | 100%  | 0% |   |
|    | APP/DEPART     | 0       | /  | 0  | 0     | /  | 0  | 0     | /  | 0  | 1     | /  | 1 |
|    | BEGIN PEAK HR  | 3:15 PM |    |    |       |    |    |       |    |    |       |    |   |
|    | VOLUMES        | 0       | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  | 1     | 0  | 1 |
|    | APPROACH %     | 0%      | 0% | 0% | 0%    | 0% | 0% | 0%    | 0% | 0% | 100%  | 0% |   |
|    | PEAK HR FACTOR | 0.000   |    |    | 0.000 |    |    | 0.000 |    |    | 0.250 |    |   |
|    | APP/DEPART     | 0       | /  | 0  | 0     | /  | 0  | 0     | /  | 0  | 1     | /  | 1 |

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INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

|                               |                                             |                                               |                                       |                        |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|
| DATE:<br>5/23/18<br>WEDNESDAY | LOCATION:<br>NORTH & SOUTH:<br>EAST & WEST: | Moreno Valley<br>I-215 NB Ramps<br>Alessandro | PROJECT #:<br>LOCATION #:<br>CONTROL: | SC1761<br>13<br>SIGNAL |
|-------------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------|------------------------|

|          |        |       |     |   |     |
|----------|--------|-------|-----|---|-----|
| CLASS 6: | NOTES: | AM    |     | ▲ |     |
| BUSES    |        | PM    |     | N |     |
|          |        | MD    | ◄ W |   | E ► |
|          |        | OTHER |     | S |     |
|          |        | OTHER |     | ▼ |     |

|        | NORTHBOUND     |    |    | SOUTHBOUND     |    |    | EASTBOUND  |    |    | WESTBOUND  |    |    |       |
|--------|----------------|----|----|----------------|----|----|------------|----|----|------------|----|----|-------|
|        | I-215 NB Ramps |    |    | I-215 NB Ramps |    |    | Alessandro |    |    | Alessandro |    |    |       |
| LANES: | NL             | NT | NR | SL             | ST | SR | EL         | ET | ER | WL         | WT | WR | TOTAL |

|    |                |         |    |     |       |    |    |       |    |    |       |    |    |
|----|----------------|---------|----|-----|-------|----|----|-------|----|----|-------|----|----|
| AM | 7:00 AM        | 2       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 2     | 0  | 4  |
|    | 7:15 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 2     | 0  | 2  |
|    | 7:30 AM        | 1       | 0  | 0   | 0     | 0  | 0  | 1     | 0  | 0  | 3     | 0  | 5  |
|    | 7:45 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 1     | 0  | 0  | 0     | 0  | 1  |
|    | 8:00 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 1     | 0  | 0  | 0     | 0  | 1  |
|    | 8:15 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 2     | 0  | 2  |
|    | 8:30 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 1     | 0  | 0  | 0     | 0  | 1  |
|    | 8:45 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | 9:00 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | 9:15 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | 9:30 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | 9:45 AM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | VOLUMES        | 3       | 0  | 0   | 0     | 0  | 0  | 4     | 0  | 0  | 9     | 0  | 16 |
|    | APPROACH %     | 100%    | 0% | 0%  | 0%    | 0% | 0% | 100%  | 0% | 0% | 100%  | 0% |    |
| PM | APP/DEPART     | 3       | /  | 0   | 0     | /  | 4  | /     | 4  | 9  | /     | 12 | 0  |
|    | BEGIN PEAK HR  | 7:00 AM |    |     |       |    |    |       |    |    |       |    |    |
|    | VOLUMES        | 3       | 0  | 0   | 0     | 0  | 0  | 2     | 0  | 0  | 7     | 0  | 12 |
|    | APPROACH %     | 100%    | 0% | 0%  | 0%    | 0% | 0% | 100%  | 0% | 0% | 100%  | 0% |    |
|    | PEAK HR FACTOR | 0.375   |    |     | 0.000 |    |    | 0.500 |    |    | 0.583 |    |    |
|    | APP/DEPART     | 3       | /  | 0   | 0     | /  | 2  | /     | 2  | 7  | /     | 10 | 0  |
|    | 03:00 PM       | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | 3:15 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | 3:30 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | 3:45 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | 4:00 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 0  |
|    | 4:15 PM        | 1       | 0  | 0   | 0     | 0  | 0  | 1     | 0  | 0  | 0     | 0  | 2  |
|    | 4:30 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 1     | 0  | 0  | 1     | 0  | 2  |
|    | 4:45 PM        | 1       | 0  | 0   | 0     | 0  | 0  | 0     | 0  | 0  | 1     | 0  | 2  |
|    | 5:00 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 1     | 0  | 0  | 1     | 0  | 2  |
|    | 5:15 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 1     | 0  | 0  | 0     | 0  | 1  |
|    | 5:30 PM        | 0       | 0  | 1   | 0     | 0  | 0  | 0     | 0  | 0  | 0     | 0  | 1  |
|    | 5:45 PM        | 0       | 0  | 0   | 0     | 0  | 0  | 1     | 0  | 0  | 0     | 0  | 1  |
|    | VOLUMES        | 2       | 0  | 1   | 0     | 0  | 0  | 5     | 0  | 0  | 3     | 0  | 11 |
|    | APPROACH %     | 67%     | 0% | 33% | 0%    | 0% | 0% | 100%  | 0% | 0% | 100%  | 0% |    |
|    | APP/DEPART     | 3       | /  | 0   | 0     | /  | 5  | /     | 6  | 3  | /     | 5  | 0  |
|    | BEGIN PEAK HR  | 4:15 PM |    |     |       |    |    |       |    |    |       |    |    |
|    | VOLUMES        | 2       | 0  | 0   | 0     | 0  | 0  | 3     | 0  | 0  | 3     | 0  | 8  |
|    | APPROACH %     | 100%    | 0% | 0%  | 0%    | 0% | 0% | 100%  | 0% | 0% | 100%  | 0% |    |
|    | PEAK HR FACTOR | 0.500   |    |     | 0.000 |    |    | 0.750 |    |    | 0.750 |    |    |
|    | APP/DEPART     | 2       | /  | 0   | 0     | /  | 3  | /     | 3  | 3  | /     | 5  | 0  |

| U-TURNS |    |    |    |     |
|---------|----|----|----|-----|
| NB      | SB | EB | WB | TTL |
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| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |
| 0       | 0  | 0  | 0  | 0   |

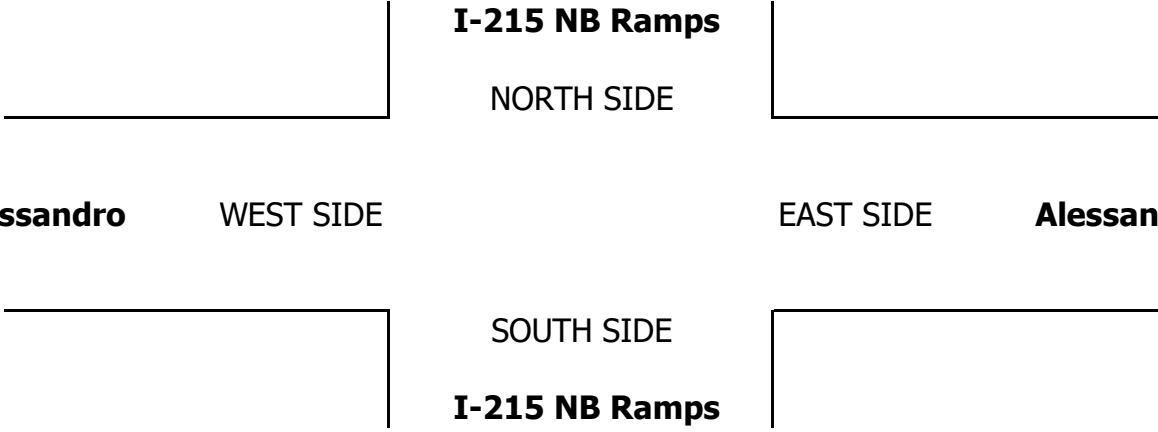
| RTOR |     |     |     |
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| NRR  | SRR | ERR | WRR |
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## **APPENDIX 3.2:**

### **EXISTING (2019) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/22/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 9                                                                                 | 1203                                                                              | 42                                                                                | 2476                                                                              | 1                                                                                 | 62                                                                                | 0                                                                                   | 36                                                                                  | 1                                                                                   | 3                                                                                   | 3                                                                                   |
| Future Volume (vph)  | 9                                                                                 | 1203                                                                              | 42                                                                                | 2476                                                                              | 1                                                                                 | 62                                                                                | 0                                                                                   | 36                                                                                  | 1                                                                                   | 3                                                                                   | 3                                                                                   |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 68.4                                                                              | 11.0                                                                              | 70.2                                                                              | 70.2                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                |
| Total Split (%)      | 7.7%                                                                              | 57.0%                                                                             | 9.2%                                                                              | 58.5%                                                                             | 58.5%                                                                             | 33.8%                                                                             | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

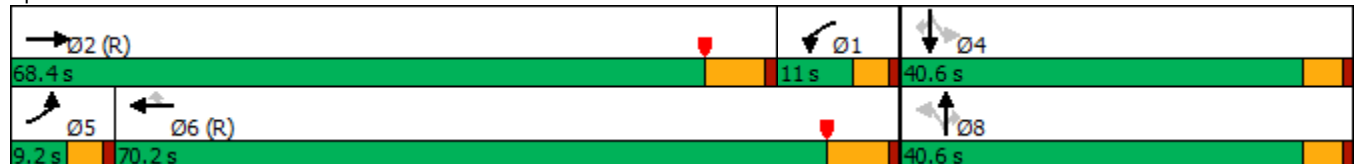
Actuated Cycle Length: 120

Offset: 88 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |  |                                                                                     |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 9                                                                                 | 1203                                                                                                                                                                                                                                                  | 23                                                                                | 42                                                                                | 2476                                                                                                                                                                                                                                                  | 1                                                                                 | 62                                                                                  | 0                                                                                   | 36                                                                                  | 1                                                                                   | 3                                                                                   | 3                                                                                   |
| Future Volume (veh/h)        | 9                                                                                 | 1203                                                                                                                                                                                                                                                  | 23                                                                                | 42                                                                                | 2476                                                                                                                                                                                                                                                  | 1                                                                                 | 62                                                                                  | 0                                                                                   | 36                                                                                  | 1                                                                                   | 3                                                                                   | 3                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                     | 0.99                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 10                                                                                | 1294                                                                                                                                                                                                                                                  | 25                                                                                | 45                                                                                | 2662                                                                                                                                                                                                                                                  | 1                                                                                 | 67                                                                                  | 0                                                                                   | 8                                                                                   | 1                                                                                   | 3                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 21                                                                                | 2702                                                                                                                                                                                                                                                  | 52                                                                                | 68                                                                                | 2908                                                                                                                                                                                                                                                  | 903                                                                               | 491                                                                                 | 0                                                                                   | 477                                                                                 | 147                                                                                 | 424                                                                                 | 483                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.52                                                                                                                                                                                                                                                  | 0.52                                                                              | 0.01                                                                              | 0.19                                                                                                                                                                                                                                                  | 0.19                                                                              | 0.30                                                                                | 0.00                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5239                                                                                                                                                                                                                                                  | 101                                                                               | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 1438                                                                                | 0                                                                                   | 1590                                                                                | 366                                                                                 | 1413                                                                                | 1610                                                                                |
| Grp Volume(v), veh/h         | 10                                                                                | 854                                                                                                                                                                                                                                                   | 465                                                                               | 45                                                                                | 2662                                                                                                                                                                                                                                                  | 1                                                                                 | 67                                                                                  | 0                                                                                   | 8                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1882                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1438                                                                                | 0                                                                                   | 1590                                                                                | 1780                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.7                                                                               | 19.1                                                                                                                                                                                                                                                  | 19.1                                                                              | 3.0                                                                               | 60.4                                                                                                                                                                                                                                                  | 0.1                                                                               | 3.9                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.7                                                                               | 19.1                                                                                                                                                                                                                                                  | 19.1                                                                              | 3.0                                                                               | 60.4                                                                                                                                                                                                                                                  | 0.1                                                                               | 4.1                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.05                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 0.25                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 21                                                                                | 1784                                                                                                                                                                                                                                                  | 971                                                                               | 68                                                                                | 2908                                                                                                                                                                                                                                                  | 903                                                                               | 491                                                                                 | 0                                                                                   | 477                                                                                 | 571                                                                                 | 0                                                                                   | 483                                                                                 |
| V/C Ratio(X)                 | 0.47                                                                              | 0.48                                                                                                                                                                                                                                                  | 0.48                                                                              | 0.66                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.14                                                                                | 0.00                                                                                | 0.02                                                                                | 0.01                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 1784                                                                                                                                                                                                                                                  | 971                                                                               | 103                                                                               | 2908                                                                                                                                                                                                                                                  | 903                                                                               | 491                                                                                 | 0                                                                                   | 477                                                                                 | 571                                                                                 | 0                                                                                   | 483                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.82                                                                              | 0.82                                                                                                                                                                                                                                                  | 0.82                                                                              | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.9                                                                              | 18.7                                                                                                                                                                                                                                                  | 18.7                                                                              | 58.5                                                                              | 46.1                                                                                                                                                                                                                                                  | 21.5                                                                              | 30.8                                                                                | 0.0                                                                                 | 29.5                                                                                | 29.5                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 5.8                                                                               | 0.9                                                                                                                                                                                                                                                   | 1.7                                                                               | 3.4                                                                               | 4.9                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.3                                                                               | 7.1                                                                                                                                                                                                                                                   | 7.9                                                                               | 1.4                                                                               | 29.0                                                                                                                                                                                                                                                  | 0.0                                                                               | 1.5                                                                                 | 0.0                                                                                 | 0.2                                                                                 | 0.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 64.7                                                                              | 19.6                                                                                                                                                                                                                                                  | 20.4                                                                              | 61.9                                                                              | 51.0                                                                                                                                                                                                                                                  | 21.5                                                                              | 31.4                                                                                | 0.0                                                                                 | 29.6                                                                                | 29.5                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | B                                                                                                                                                                                                                                                     | C                                                                                 | E                                                                                 | D                                                                                                                                                                                                                                                     | C                                                                                 | C                                                                                   | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1329                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 2708                                                                                                                                                                                                                                                  |                                                                                   |                                                                                     |                                                                                     | 75                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 20.2                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 51.1                                                                                                                                                                                                                                                  |                                                                                   |                                                                                     |                                                                                     | 31.2                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | D                                                                                                                                                                                                                                                     |                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 4                                                                                 | 5                                                                                                                                                                                                                                                     | 6                                                                                 |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              | 68.4                                                                                                                                                                                                                                                  |                                                                                   | 40.6                                                                              | 5.6                                                                                                                                                                                                                                                   | 73.8                                                                              |                                                                                     | 40.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 6.5                                                                               | * 6.5                                                                                                                                                                                                                                                 |                                                                                   | 4.6                                                                               | * 4.2                                                                                                                                                                                                                                                 | 6.5                                                                               |                                                                                     | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.8                                                                               | * 62                                                                                                                                                                                                                                                  |                                                                                   | 36.0                                                                              | * 5                                                                                                                                                                                                                                                   | 63.7                                                                              |                                                                                     | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+l1), s | 5.0                                                                               | 21.1                                                                                                                                                                                                                                                  |                                                                                   | 2.2                                                                               | 2.7                                                                                                                                                                                                                                                   | 62.4                                                                              |                                                                                     | 6.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 14.8                                                                                                                                                                                                                                                  |                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 1.3                                                                               |                                                                                     | 0.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 40.8 |
| HCM 6th LOS        | D    |

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/22/2019



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | Ø6   |
|----------------------|------|-------|------|-------|-------|-------|------|
| Lane Configurations  | ↰    | ↰↰↰   | ↰    | ↰↰↰   |       | ↰↰    |      |
| Traffic Volume (vph) | 5    | 1217  | 2    | 2488  | 3     | 0     |      |
| Future Volume (vph)  | 5    | 1217  | 2    | 2488  | 3     | 0     |      |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    |      |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     | 6    |
| Permitted Phases     |      |       |      |       | 2     |       |      |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     |      |
| Switch Phase         |      |       |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.2  | 23.5  | 9.2  | 23.5  | 14.6  | 14.6  | 14.6 |
| Total Split (s)      | 10.0 | 95.0  | 10.0 | 95.0  | 15.0  | 15.0  | 15.0 |
| Total Split (%)      | 8.3% | 79.2% | 8.3% | 79.2% | 12.5% | 12.5% | 13%  |
| Yellow Time (s)      | 3.2  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   |      |
| Total Lost Time (s)  | 4.2  | 6.5   | 4.2  | 6.5   |       | 4.6   |      |
| Lead/Lag             | Lead | Lead  | Lag  | Lag   |       |       |      |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |      |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 81 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/22/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 5                                                                                 | 1217                                                                              | 5                                                                                 | 2                                                                                 | 2488                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1217                                                                              | 5                                                                                 | 2                                                                                 | 2488                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1323                                                                              | 5                                                                                 | 2                                                                                 | 2704                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 3934                                                                              | 15                                                                                | 195                                                                               | 4451                                                                              | 0                                                                                 | 71                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 15                                                                                  | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 1.00                                                                              | 1.00                                                                              | 0.11                                                                              | 0.86                                                                              | 0.00                                                                              | 0.01                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5334                                                                              | 20                                                                                | 1810                                                                              | 5358                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Grp Volume(v), veh/h         | 5                                                                                 | 858                                                                               | 470                                                                               | 2                                                                                 | 2704                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1896                                                                              | 1810                                                                              | 1729                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.3                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 18.5                                                                              | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.3                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 18.5                                                                              | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                               |                                                                                     | 0.00                                                                                | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 2550                                                                              | 1399                                                                              | 195                                                                               | 4451                                                                              | 0                                                                                 | 71                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 15                                                                                  | 0                                                                                   |
| V/C Ratio(X)                 | 0.43                                                                              | 0.34                                                                              | 0.34                                                                              | 0.01                                                                              | 0.61                                                                              | 0.00                                                                              | 0.04                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 87                                                                                | 2550                                                                              | 1399                                                                              | 195                                                                               | 4451                                                                              | 0                                                                                 | 185                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 165                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 59.0                                                                              | 0.0                                                                               | 0.0                                                                               | 47.8                                                                              | 2.5                                                                               | 0.0                                                                               | 59.2                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 8.1                                                                               | 0.3                                                                               | 0.6                                                                               | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 0.1                                                                               | 0.2                                                                               | 0.1                                                                               | 1.7                                                                               | 0.0                                                                               | 0.1                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 67.1                                                                              | 0.3                                                                               | 0.6                                                                               | 47.8                                                                              | 3.1                                                                               | 0.0                                                                               | 59.4                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                  | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1333                                                                              |                                                                                   |                                                                                   | 2706                                                                              |                                                                                   |                                                                                   | 3                                                                                  |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.7                                                                               |                                                                                   |                                                                                   | 3.2                                                                               |                                                                                   |                                                                                   | 59.4                                                                               |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | E                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 5.6                                                                               |                                                                                   | 19.4                                                                              | 95.0                                                                              |                                                                                   | 5.6                                                                               |                                                                                    | 5.0                                                                                 | 109.5                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 6.5                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               |                                                                                    | * 4.2                                                                               | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                   | 5.8                                                                               | * 89                                                                              |                                                                                   | 10.4                                                                              |                                                                                    | * 5.8                                                                               | 88.5                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.2                                                                               |                                                                                   | 2.1                                                                               | 2.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 2.3                                                                                 | 20.5                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 17.2                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 56.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   |                                                                                   | 2.4                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Intersection

Int Delay, s/veh 0.2

| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↑↑↑  |      | ↑    | ↑↑↑  | ↑    | ↑    |
| Traffic Vol, veh/h       | 1213 | 7    | 12   | 2488 | 3    | 14   |
| Future Vol, veh/h        | 1213 | 7    | 12   | 2488 | 3    | 14   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 155  | -    | 0    | 0    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 1318 | 8    | 13   | 2704 | 3    | 15   |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 1326   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 5.3    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 3.1    |
| Pot Cap-1 Maneuver   | -      | -      | 277    |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 277    |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB   |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0  | 0.1 | 26.7 |
| HCM LOS              |    |     | D    |

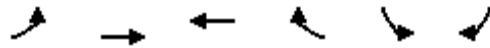
| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 53    | 350   | -   | -   | 277   | -   |
| HCM Lane V/C Ratio    | 0.062 | 0.043 | -   | -   | 0.047 | -   |
| HCM Control Delay (s) | 77.3  | 15.8  | -   | -   | 18.6  | -   |
| HCM Lane LOS          | F     | C     | -   | -   | C     | -   |
| HCM 95th %tile Q(veh) | 0.2   | 0.1   | -   | -   | 0.1   | -   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/22/2019



| Lane Group           | EBL  | EBT   | WBT   | WBR   | SBL   | SBR  |
|----------------------|------|-------|-------|-------|-------|------|
| Lane Configurations  | ↰    | ↑↑↑   | ↑↑↑   | ↱     | ↰↱    | ↱    |
| Traffic Volume (vph) | 11   | 1239  | 2642  | 35    | 20    | 14   |
| Future Volume (vph)  | 11   | 1239  | 2642  | 35    | 20    | 14   |
| Turn Type            | Prot | NA    | NA    | Perm  | Prot  | Free |
| Protected Phases     | 7    | 4     | 8     |       | 6     |      |
| Permitted Phases     |      |       |       | 8     |       | Free |
| Detector Phase       | 7    | 4     | 8     | 8     | 6     |      |
| Switch Phase         |      |       |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  |      |
| Minimum Split (s)    | 9.2  | 28.5  | 30.5  | 30.5  | 26.6  |      |
| Total Split (s)      | 10.0 | 93.4  | 83.4  | 83.4  | 26.6  |      |
| Total Split (%)      | 8.3% | 77.8% | 69.5% | 69.5% | 22.2% |      |
| Yellow Time (s)      | 3.2  | 5.5   | 5.5   | 5.5   | 3.6   |      |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |      |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.2  | 6.5   | 6.5   | 6.5   | 4.6   |      |
| Lead/Lag             | Lead |       | Lag   | Lag   |       |      |
| Lead-Lag Optimize?   | Yes  |       | Yes   | Yes   |       |      |
| Recall Mode          | None | None  | None  | None  | C-Max |      |

### Intersection Summary

Cycle Length: 120

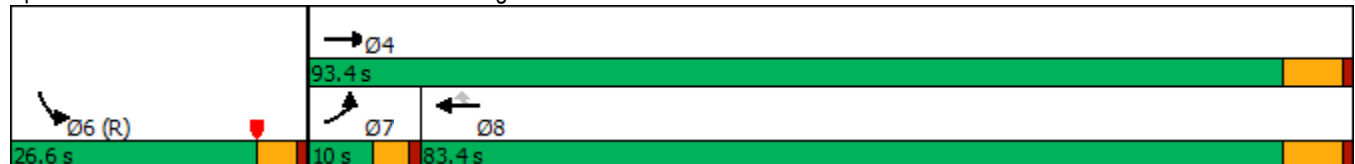
Actuated Cycle Length: 120

Offset: 50.5 (42%), Referenced to phase 2: and 6:SBL, Start of Yellow

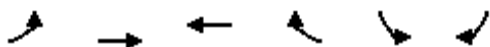
Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 5: Alessandro Bl. & San Gorgonio Dr. 05/22/2019



| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR   |
|------------------------------|------|------|------|------|------|-------|
| Lane Configurations          |      |      |      |      |      |       |
| Traffic Volume (veh/h)       | 11   | 1239 | 2642 | 35   | 20   | 14    |
| Future Volume (veh/h)        | 11   | 1239 | 2642 | 35   | 20   | 14    |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0     |
| Ped-Bike Adj(A_pbT)          | 1.00 |      |      | 1.00 | 1.00 | 1.00  |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| Work Zone On Approach        |      | No   | No   |      | No   |       |
| Adj Sat Flow, veh/h/ln       | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  |
| Adj Flow Rate, veh/h         | 12   | 1347 | 2872 | 35   | 22   | 0     |
| Peak Hour Factor             | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92  |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 0    | 0    | 0     |
| Cap, veh/h                   | 25   | 3152 | 2899 | 899  | 1053 |       |
| Arrive On Green              | 0.01 | 0.61 | 1.00 | 1.00 | 0.30 | 0.00  |
| Sat Flow, veh/h              | 1810 | 5358 | 5358 | 1609 | 3510 | 1610  |
| Grp Volume(v), veh/h         | 12   | 1347 | 2872 | 35   | 22   | 0     |
| Grp Sat Flow(s),veh/h/ln     | 1810 | 1729 | 1729 | 1609 | 1755 | 1610  |
| Q Serve(g_s), s              | 0.8  | 16.5 | 0.0  | 0.0  | 0.5  | 0.0   |
| Cycle Q Clear(g_c), s        | 0.8  | 16.5 | 0.0  | 0.0  | 0.5  | 0.0   |
| Prop In Lane                 | 1.00 |      |      | 1.00 | 1.00 | 1.00  |
| Lane Grp Cap(c), veh/h       | 25   | 3152 | 2899 | 899  | 1053 |       |
| V/C Ratio(X)                 | 0.48 | 0.43 | 0.99 | 0.04 | 0.02 |       |
| Avail Cap(c_a), veh/h        | 87   | 3756 | 3324 | 1031 | 1053 |       |
| HCM Platoon Ratio            | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00  |
| Upstream Filter(I)           | 1.00 | 1.00 | 0.25 | 0.25 | 1.00 | 0.00  |
| Uniform Delay (d), s/veh     | 58.8 | 12.5 | 0.0  | 0.0  | 29.6 | 0.0   |
| Incr Delay (d2), s/veh       | 5.3  | 0.1  | 5.7  | 0.0  | 0.0  | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.4  | 5.5  | 1.5  | 0.0  | 0.2  | 0.0   |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |       |
| LnGrp Delay(d),s/veh         | 64.1 | 12.6 | 5.7  | 0.0  | 29.6 | 0.0   |
| LnGrp LOS                    | E    | B    | A    | A    | C    |       |
| Approach Vol, veh/h          |      | 1359 | 2907 |      | 22   | A     |
| Approach Delay, s/veh        |      | 13.1 | 5.6  |      | 29.6 |       |
| Approach LOS                 |      | B    | A    |      | C    |       |
| Timer - Assigned Phs         |      |      | 4    |      | 6    | 7     |
| Phs Duration (G+Y+Rc), s     |      |      | 79.4 |      | 40.6 | 5.8   |
| Change Period (Y+Rc), s      |      |      | 6.5  |      | 4.6  | * 4.2 |
| Max Green Setting (Gmax), s  |      |      | 86.9 |      | 22.0 | * 5.8 |
| Max Q Clear Time (g_c+I1), s |      |      | 18.5 |      | 2.5  | 2.8   |
| Green Ext Time (p_c), s      |      |      | 18.5 |      | 0.0  | 0.0   |
|                              |      |      |      |      |      | 65.1  |
| <b>Intersection Summary</b>  |      |      |      |      |      |       |
| HCM 6th Ctrl Delay           |      |      | 8.1  |      |      |       |
| HCM 6th LOS                  |      |      | A    |      |      |       |

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/22/2019

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 142                                                                               | 902                                                                               | 208                                                                               | 110                                                                               | 1997                                                                              | 522                                                                               | 522                                                                                | 678                                                                                 | 67                                                                                  | 122                                                                                 | 83                                                                                  | 115                                                                                 |
| Future Volume (vph)  | 142                                                                               | 902                                                                               | 208                                                                               | 110                                                                               | 1997                                                                              | 522                                                                               | 522                                                                                | 678                                                                                 | 67                                                                                  | 122                                                                                 | 83                                                                                  | 115                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                                | 10.0                                                                                | 5.0                                                                                 | 5.0                                                                                 | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                                | 15.8                                                                                | 8.7                                                                                 | 8.7                                                                                 | 49.8                                                                                | 49.8                                                                                |
| Total Split (s)      | 10.0                                                                              | 46.8                                                                              | 46.8                                                                              | 10.4                                                                              | 47.2                                                                              | 47.2                                                                              | 13.0                                                                               | 49.4                                                                                | 10.4                                                                                | 13.4                                                                                | 49.8                                                                                | 49.8                                                                                |
| Total Split (%)      | 8.3%                                                                              | 39.0%                                                                             | 39.0%                                                                             | 8.7%                                                                              | 39.3%                                                                             | 39.3%                                                                             | 10.8%                                                                              | 41.2%                                                                               | 8.7%                                                                                | 11.2%                                                                               | 41.5%                                                                               | 41.5%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                                | 4.8                                                                                 | 3.2                                                                                 | 3.2                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                                | 1.0                                                                                 | 0.5                                                                                 | 0.5                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                                | 5.8                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                                | Lag                                                                                 | Lead                                                                                | Lead                                                                                | Lead                                                                                | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                               | None                                                                                | None                                                                                | None                                                                                | None                                                                                | None                                                                                |

### Intersection Summary

Cycle Length: 120

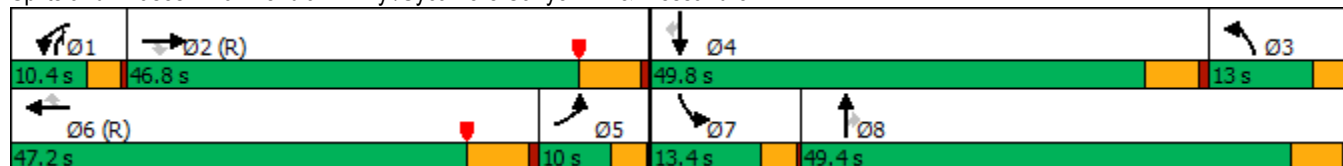
Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/22/2019

|                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (veh/h)                                                                             | 142                                                                               | 902                                                                               | 208                                                                               | 110                                                                               | 1997                                                                              | 522                                                                               | 522                                                                                 | 678                                                                                 | 67                                                                                  | 122                                                                                 | 83                                                                                  | 115                                                                                 |
| Future Volume (veh/h)                                                                              | 142                                                                               | 902                                                                               | 208                                                                               | 110                                                                               | 1997                                                                              | 522                                                                               | 522                                                                                 | 678                                                                                 | 67                                                                                  | 122                                                                                 | 83                                                                                  | 115                                                                                 |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                              |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                               | 149                                                                               | 949                                                                               | 219                                                                               | 116                                                                               | 2102                                                                              | 549                                                                               | 549                                                                                 | 714                                                                                 | 71                                                                                  | 128                                                                                 | 87                                                                                  | 121                                                                                 |
| Peak Hour Factor                                                                                   | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                         | 325                                                                               | 2560                                                                              | 795                                                                               | 169                                                                               | 1759                                                                              | 546                                                                               | 630                                                                                 | 873                                                                                 | 822                                                                                 | 183                                                                                 | 351                                                                                 | 156                                                                                 |
| Arrive On Green                                                                                    | 0.36                                                                              | 0.99                                                                              | 0.99                                                                              | 0.05                                                                              | 0.34                                                                              | 0.34                                                                              | 0.18                                                                                | 0.24                                                                                | 0.24                                                                                | 0.05                                                                                | 0.10                                                                                | 0.10                                                                                |
| Sat Flow, veh/h                                                                                    | 1810                                                                              | 5187                                                                              | 1610                                                                              | 3510                                                                              | 5187                                                                              | 1609                                                                              | 3510                                                                                | 3610                                                                                | 2834                                                                                | 3510                                                                                | 3610                                                                                | 1610                                                                                |
| Grp Volume(v), veh/h                                                                               | 149                                                                               | 949                                                                               | 219                                                                               | 116                                                                               | 2102                                                                              | 549                                                                               | 549                                                                                 | 714                                                                                 | 71                                                                                  | 128                                                                                 | 87                                                                                  | 121                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                           | 1810                                                                              | 1729                                                                              | 1610                                                                              | 1755                                                                              | 1729                                                                              | 1609                                                                              | 1755                                                                                | 1805                                                                                | 1417                                                                                | 1755                                                                                | 1805                                                                                | 1610                                                                                |
| Q Serve(g_s), s                                                                                    | 7.6                                                                               | 0.4                                                                               | 0.1                                                                               | 3.9                                                                               | 40.7                                                                              | 32.2                                                                              | 18.3                                                                                | 22.4                                                                                | 2.2                                                                                 | 4.3                                                                                 | 2.7                                                                                 | 8.8                                                                                 |
| Cycle Q Clear(g_c), s                                                                              | 7.6                                                                               | 0.4                                                                               | 0.1                                                                               | 3.9                                                                               | 40.7                                                                              | 32.2                                                                              | 18.3                                                                                | 22.4                                                                                | 2.2                                                                                 | 4.3                                                                                 | 2.7                                                                                 | 8.8                                                                                 |
| Prop In Lane                                                                                       | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                             | 325                                                                               | 2560                                                                              | 795                                                                               | 169                                                                               | 1759                                                                              | 546                                                                               | 630                                                                                 | 873                                                                                 | 822                                                                                 | 183                                                                                 | 351                                                                                 | 156                                                                                 |
| V/C Ratio(X)                                                                                       | 0.46                                                                              | 0.37                                                                              | 0.28                                                                              | 0.68                                                                              | 1.19                                                                              | 1.01                                                                              | 0.87                                                                                | 0.82                                                                                | 0.09                                                                                | 0.70                                                                                | 0.25                                                                                | 0.77                                                                                |
| Avail Cap(c_a), veh/h                                                                              | 325                                                                               | 2560                                                                              | 795                                                                               | 196                                                                               | 1759                                                                              | 546                                                                               | 630                                                                                 | 1312                                                                                | 1166                                                                                | 284                                                                                 | 1324                                                                                | 590                                                                                 |
| HCM Platoon Ratio                                                                                  | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                 | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                           | 34.0                                                                              | 0.4                                                                               | 0.1                                                                               | 56.2                                                                              | 39.7                                                                              | 24.9                                                                              | 47.9                                                                                | 43.0                                                                                | 31.0                                                                                | 55.9                                                                                | 50.1                                                                                | 52.9                                                                                |
| Incr Delay (d2), s/veh                                                                             | 0.4                                                                               | 0.4                                                                               | 0.8                                                                               | 5.5                                                                               | 93.6                                                                              | 40.1                                                                              | 12.3                                                                                | 2.6                                                                                 | 0.0                                                                                 | 1.8                                                                                 | 0.4                                                                                 | 7.9                                                                                 |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                           | 3.0                                                                               | 0.2                                                                               | 0.3                                                                               | 1.8                                                                               | 31.6                                                                              | 17.5                                                                              | 8.8                                                                                 | 10.0                                                                                | 0.7                                                                                 | 1.9                                                                                 | 1.2                                                                                 | 3.8                                                                                 |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 34.4                                                                              | 0.8                                                                               | 0.9                                                                               | 61.7                                                                              | 133.2                                                                             | 65.0                                                                              | 60.2                                                                                | 45.6                                                                                | 31.1                                                                                | 57.7                                                                                | 50.5                                                                                | 60.8                                                                                |
| LnGrp LOS                                                                                          | C                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | F                                                                                 | F                                                                                 | E                                                                                   | D                                                                                   | C                                                                                   | E                                                                                   | D                                                                                   | E                                                                                   |
| Approach Vol, veh/h                                                                                |                                                                                   | 1317                                                                              |                                                                                   |                                                                                   | 2767                                                                              |                                                                                   |                                                                                     | 1334                                                                                |                                                                                     |                                                                                     | 336                                                                                 |                                                                                     |
| Approach Delay, s/veh                                                                              |                                                                                   | 4.6                                                                               |                                                                                   |                                                                                   | 116.7                                                                             |                                                                                   |                                                                                     | 50.8                                                                                |                                                                                     |                                                                                     | 56.9                                                                                |                                                                                     |
| Approach LOS                                                                                       |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | D                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                               | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           | 9.5                                                                               | 65.7                                                                              | 27.3                                                                              | 17.5                                                                              | 28.0                                                                              | 47.2                                                                              | 10.0                                                                                | 34.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            | 3.7                                                                               | 6.5                                                                               | 5.8                                                                               | * 5.8                                                                             | 6.5                                                                               | * 6.5                                                                             | 3.7                                                                                 | 5.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        | 6.7                                                                               | 40.3                                                                              | 9.3                                                                               | * 44                                                                              | 6.3                                                                               | * 41                                                                              | 9.7                                                                                 | 43.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       | 5.9                                                                               | 2.4                                                                               | 20.3                                                                              | 10.8                                                                              | 9.6                                                                               | 42.7                                                                              | 6.3                                                                                 | 24.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            | 0.0                                                                               | 12.3                                                                              | 0.0                                                                               | 0.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 |                                                                                   |                                                                                   | 72.3                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↰     | ↰     |
| Traffic Volume (vph) | 710   | 2412  | 210   | 0     | 311   |
| Future Volume (vph)  | 710   | 2412  | 210   | 0     | 311   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 63.0  | 63.0  | 22.0  | 22.0  | 22.0  |
| Total Split (%)      | 74.1% | 74.1% | 25.9% | 25.9% | 25.9% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 9 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.

|          |  |      |
|----------|--|------|
| → Ø2 (R) |  | ↰ Ø4 |
| 63 s     |  | 22 s |
| ← Ø6 (R) |  |      |
| 63 s     |  |      |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |                                                                                   |    |                                                                                   |                                                                                   |    |                                                                                   |                                                                                    |                                                                                     |                                                                                     |  |   |  |
| Traffic Volume (veh/h)       | 0                                                                                 | 710                                                                                                                                                                                                                                                   | 324                                                                               | 0                                                                                 | 2412                                                                                                                                                                                                                                                  | 200                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 210                                                                                 | 0                                                                                                                                                                       | 311                                                                                 |
| Future Volume (veh/h)        | 0                                                                                 | 710                                                                                                                                                                                                                                                   | 324                                                                               | 0                                                                                 | 2412                                                                                                                                                                                                                                                  | 200                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 210                                                                                 | 0                                                                                                                                                                       | 311                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | No                                                                                                                                                                      |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              |                                                                                    |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 0                                                                                 | 732                                                                                                                                                                                                                                                   | 305                                                                               | 0                                                                                 | 2487                                                                                                                                                                                                                                                  | 206                                                                               |                                                                                    |                                                                                     |                                                                                     | 312                                                                                 | 0                                                                                                                                                                       | 174                                                                                 |
| Peak Hour Factor             | 0.97                                                                              | 0.97                                                                                                                                                                                                                                                  | 0.97                                                                              | 0.97                                                                              | 0.97                                                                                                                                                                                                                                                  | 0.97                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.97                                                                                | 0.97                                                                                                                                                                    | 0.97                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 0                                                                                 | 2641                                                                                                                                                                                                                                                  | 1086                                                                              | 0                                                                                 | 3600                                                                                                                                                                                                                                                  | 292                                                                               |                                                                                    |                                                                                     |                                                                                     | 503                                                                                 | 0                                                                                                                                                                       | 223                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.74                                                                                                                                                                                                                                                  | 0.74                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.14                                                                                | 0.00                                                                                                                                                                    | 0.14                                                                                |
| Sat Flow, veh/h              | 0                                                                                 | 3753                                                                                                                                                                                                                                                  | 1473                                                                              | 0                                                                                 | 5052                                                                                                                                                                                                                                                  | 395                                                                               |                                                                                    |                                                                                     |                                                                                     | 3619                                                                                | 0                                                                                                                                                                       | 1607                                                                                |
| Grp Volume(v), veh/h         | 0                                                                                 | 706                                                                                                                                                                                                                                                   | 331                                                                               | 0                                                                                 | 1746                                                                                                                                                                                                                                                  | 947                                                                               |                                                                                    |                                                                                     |                                                                                     | 312                                                                                 | 0                                                                                                                                                                       | 174                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1597                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1818                                                                              |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                                                                                                       | 1607                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 5.7                                                                                                                                                                                                                                                   | 5.8                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 6.9                                                                                 | 0.0                                                                                                                                                                     | 8.9                                                                                 |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 5.7                                                                                                                                                                                                                                                   | 5.8                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 6.9                                                                                 | 0.0                                                                                                                                                                     | 8.9                                                                                 |
| Prop In Lane                 | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.92                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.22                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 0                                                                                 | 2550                                                                                                                                                                                                                                                  | 1177                                                                              | 0                                                                                 | 2550                                                                                                                                                                                                                                                  | 1341                                                                              |                                                                                    |                                                                                     |                                                                                     | 503                                                                                 | 0                                                                                                                                                                       | 223                                                                                 |
| V/C Ratio(X)                 | 0.00                                                                              | 0.28                                                                                                                                                                                                                                                  | 0.28                                                                              | 0.00                                                                              | 0.68                                                                                                                                                                                                                                                  | 0.71                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.62                                                                                | 0.00                                                                                                                                                                    | 0.78                                                                                |
| Avail Cap(c_a), veh/h        | 0                                                                                 | 2550                                                                                                                                                                                                                                                  | 1177                                                                              | 0                                                                                 | 2550                                                                                                                                                                                                                                                  | 1341                                                                              |                                                                                    |                                                                                     |                                                                                     | 724                                                                                 | 0                                                                                                                                                                       | 321                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 2.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(I)           | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 0.58                                                                                                                                                                                                                                                  | 0.58                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 3.7                                                                                                                                                                                                                                                   | 3.7                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 34.5                                                                                | 0.0                                                                                                                                                                     | 35.3                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.3                                                                                                                                                                                                                                                   | 0.6                                                                               | 0.0                                                                               | 0.9                                                                                                                                                                                                                                                   | 1.8                                                                               |                                                                                    |                                                                                     |                                                                                     | 1.3                                                                                 | 0.0                                                                                                                                                                     | 7.4                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 1.1                                                                                                                                                                                                                                                   | 1.1                                                                               | 0.0                                                                               | 0.3                                                                                                                                                                                                                                                   | 0.7                                                                               |                                                                                    |                                                                                     |                                                                                     | 2.9                                                                                 | 0.0                                                                                                                                                                     | 3.7                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 4.0                                                                                                                                                                                                                                                   | 4.3                                                                               | 0.0                                                                               | 0.9                                                                                                                                                                                                                                                   | 1.8                                                                               |                                                                                    |                                                                                     |                                                                                     | 35.7                                                                                | 0.0                                                                                                                                                                     | 42.8                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | D                                                                                   | A                                                                                                                                                                       | D                                                                                   |
| Approach Vol, veh/h          | 1037                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2693                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     | 486                                                                                 |                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        | 4.1                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 1.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     | 38.3                                                                                |                                                                                                                                                                         |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     | D                                                                                   |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 4                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 68.2                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 16.8                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 68.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 57.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 17.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 57.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 7.8                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 10.9                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 7.3                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.9                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 36.1                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 6.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                      |  |                                                                                                                                                                      |                                                                                                                                                                      |  |  |                                                                                    |   |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                               | NBT                                                                                                                                                                 | NBR                                                                                 |
| Lane Configurations  |  |    |    |  |  |   |  |
| Traffic Volume (vph) | 63                                                                                | 891                                                                                                                                                                                                                                                   | 1582                                                                                                                                                                                                                                                  | 140                                                                               | 934                                                                               | 0                                                                                                                                                                   | 218                                                                                 |
| Future Volume (vph)  | 63                                                                                | 891                                                                                                                                                                                                                                                   | 1582                                                                                                                                                                                                                                                  | 140                                                                               | 934                                                                               | 0                                                                                                                                                                   | 218                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Split                                                                             | NA                                                                                                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     |                                                                                   | 8                                                                                 | 8                                                                                                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                     | 8                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     | 6                                                                                 | 8                                                                                 | 8                                                                                                                                                                   | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 9.5                                                                               | 10.5                                                                                                                                                                                                                                                  | 33.5                                                                                                                                                                                                                                                  | 33.5                                                                              | 10.0                                                                              | 10.0                                                                                                                                                                | 10.0                                                                                |
| Total Split (s)      | 10.0                                                                              | 49.0                                                                                                                                                                                                                                                  | 39.0                                                                                                                                                                                                                                                  | 39.0                                                                              | 36.0                                                                              | 36.0                                                                                                                                                                | 36.0                                                                                |
| Total Split (%)      | 11.8%                                                                             | 57.6%                                                                                                                                                                                                                                                 | 45.9%                                                                                                                                                                                                                                                 | 45.9%                                                                             | 42.4%                                                                             | 42.4%                                                                                                                                                               | 42.4%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                               | 4.0                                                                               | 4.0                                                                                                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.5                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Lead/Lag             | Lag                                                                               |                                                                                                                                                                                                                                                       | Lead                                                                                                                                                                                                                                                  | Lead                                                                              |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                                   | Yes                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | Max                                                                               | Max                                                                                                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 85

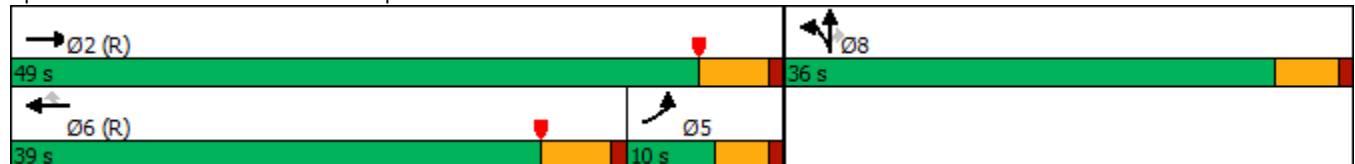
Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)       | 63                                                                                | 891                                                                                                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 1582                                                                                                                                                                                                                                                  | 140                                                                               | 934                                                                                 | 0                                                                                                                                                                       | 218                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 63                                                                                | 891                                                                                                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 1582                                                                                                                                                                                                                                                  | 140                                                                               | 934                                                                                 | 0                                                                                                                                                                       | 218                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h         | 64                                                                                | 909                                                                                                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 1614                                                                                                                                                                                                                                                  | 123                                                                               | 1003                                                                                | 0                                                                                                                                                                       | 107                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor             | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                                | 0.98                                                                                                                                                                    | 0.98                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                   | 96                                                                                | 2655                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green              | 0.11                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.39                                                                                                                                                                                                                                                  | 0.39                                                                              | 0.36                                                                                | 0.00                                                                                                                                                                    | 0.36                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h              | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1573                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h         | 64                                                                                | 909                                                                                                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 1614                                                                                                                                                                                                                                                  | 123                                                                               | 1003                                                                                | 0                                                                                                                                                                       | 107                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1573                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 2.9                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 23.3                                                                                                                                                                                                                                                  | 4.4                                                                               | 20.7                                                                                | 0.0                                                                                                                                                                     | 3.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 2.9                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 23.3                                                                                                                                                                                                                                                  | 4.4                                                                               | 20.7                                                                                | 0.0                                                                                                                                                                     | 3.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 96                                                                                | 2655                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.67                                                                              | 0.34                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.79                                                                                                                                                                                                                                                  | 0.20                                                                              | 0.76                                                                                | 0.00                                                                                                                                                                    | 0.18                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 117                                                                               | 2655                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 37.3                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 22.6                                                                                                                                                                                                                                                  | 16.9                                                                              | 23.7                                                                                | 0.0                                                                                                                                                                     | 18.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 8.0                                                                               | 0.3                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 3.2                                                                                                                                                                                                                                                   | 0.7                                                                               | 4.2                                                                                 | 0.0                                                                                                                                                                     | 0.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 1.4                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 8.6                                                                                                                                                                                                                                                   | 1.5                                                                               | 8.7                                                                                 | 0.0                                                                                                                                                                     | 1.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 45.3                                                                              | 0.3                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 25.8                                                                                                                                                                                                                                                  | 17.6                                                                              | 27.9                                                                                | 0.0                                                                                                                                                                     | 19.1                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | B                                                                                 | C                                                                                   | A                                                                                                                                                                       | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 973                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 1737                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1110                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 3.3                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 25.3                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 27.0                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 49.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 10.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 39.0                                                                                |                                                                                                                                                                         |                                                                                     | 36.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 5.5                                                                               |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 43.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 34                                                                                |                                                                                                                                                                         |                                                                                     | 31.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.9                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 25.3                                                                                |                                                                                                                                                                         |                                                                                     | 22.7                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 6.3                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.8                                                                                 |                                                                                                                                                                         |                                                                                     | 2.9                                                                                 |                                                                                     |                                                                                     |

### Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 20.2 |
| HCM 6th LOS        | C    |

### Notes

User approved volume balancing among the lanes for turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/22/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 6                                                                                 | 2287                                                                              | 46                                                                                | 1814                                                                              | 1                                                                                 | 55                                                                                | 0                                                                                   | 28                                                                                  | 8                                                                                   | 0                                                                                   | 12                                                                                  |
| Future Volume (vph)  | 6                                                                                 | 2287                                                                              | 46                                                                                | 1814                                                                              | 1                                                                                 | 55                                                                                | 0                                                                                   | 28                                                                                  | 8                                                                                   | 0                                                                                   | 12                                                                                  |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 68.4                                                                              | 11.0                                                                              | 70.2                                                                              | 70.2                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                |
| Total Split (%)      | 7.7%                                                                              | 57.0%                                                                             | 9.2%                                                                              | 58.5%                                                                             | 58.5%                                                                             | 33.8%                                                                             | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

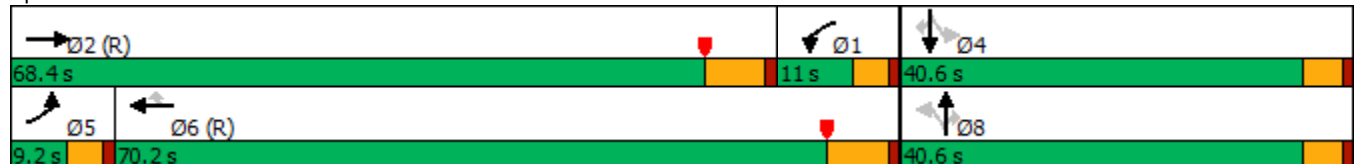
Actuated Cycle Length: 120

Offset: 71 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 2: Barton St. & Alessandro Bl. 05/22/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 6                                                                                 | 2287                                                                              | 41                                                                                | 46                                                                                | 1814                                                                              | 1                                                                                 | 55                                                                                 | 0                                                                                   | 28                                                                                  | 8                                                                                   | 0                                                                                   | 12                                                                                  |
| Future Volume (veh/h)        | 6                                                                                 | 2287                                                                              | 41                                                                                | 46                                                                                | 1814                                                                              | 1                                                                                 | 55                                                                                 | 0                                                                                   | 28                                                                                  | 8                                                                                   | 0                                                                                   | 12                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 6                                                                                 | 2407                                                                              | 41                                                                                | 48                                                                                | 1909                                                                              | 1                                                                                 | 58                                                                                 | 0                                                                                   | 7                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 14                                                                                | 2710                                                                              | 46                                                                                | 68                                                                                | 2930                                                                              | 910                                                                               | 502                                                                                | 0                                                                                   | 482                                                                                 | 455                                                                                 | 0                                                                                   | 483                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.52                                                                              | 0.52                                                                              | 0.01                                                                              | 0.19                                                                              | 0.19                                                                              | 0.30                                                                               | 0.00                                                                                | 0.30                                                                                | 0.30                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5253                                                                              | 89                                                                                | 1810                                                                              | 5187                                                                              | 1610                                                                              | 1474                                                                               | 0                                                                                   | 1605                                                                                | 1317                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 6                                                                                 | 1582                                                                              | 866                                                                               | 48                                                                                | 1909                                                                              | 1                                                                                 | 58                                                                                 | 0                                                                                   | 7                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1884                                                                              | 1810                                                                              | 1729                                                                              | 1610                                                                              | 1474                                                                               | 0                                                                                   | 1605                                                                                | 1317                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.4                                                                               | 49.0                                                                              | 49.4                                                                              | 3.2                                                                               | 40.9                                                                              | 0.1                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.4                                                                                 | 0.5                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.4                                                                               | 49.0                                                                              | 49.4                                                                              | 3.2                                                                               | 40.9                                                                              | 0.1                                                                               | 2.8                                                                                | 0.0                                                                                 | 0.4                                                                                 | 3.3                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.05                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 14                                                                                | 1784                                                                              | 972                                                                               | 68                                                                                | 2930                                                                              | 910                                                                               | 502                                                                                | 0                                                                                   | 482                                                                                 | 455                                                                                 | 0                                                                                   | 483                                                                                 |
| V/C Ratio(X)                 | 0.44                                                                              | 0.89                                                                              | 0.89                                                                              | 0.71                                                                              | 0.65                                                                              | 0.00                                                                              | 0.12                                                                               | 0.00                                                                                | 0.01                                                                                | 0.02                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 1784                                                                              | 972                                                                               | 103                                                                               | 2930                                                                              | 910                                                                               | 502                                                                                | 0                                                                                   | 482                                                                                 | 455                                                                                 | 0                                                                                   | 483                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.33                                                                              | 0.33                                                                              | 0.33                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 59.3                                                                              | 25.9                                                                              | 26.0                                                                              | 58.6                                                                              | 37.9                                                                              | 21.3                                                                              | 30.4                                                                               | 0.0                                                                                 | 29.5                                                                                | 31.6                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 8.0                                                                               | 7.0                                                                               | 12.1                                                                              | 4.5                                                                               | 1.0                                                                               | 0.0                                                                               | 0.5                                                                                | 0.0                                                                                 | 0.1                                                                                 | 0.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 19.4                                                                              | 22.7                                                                              | 1.5                                                                               | 19.0                                                                              | 0.0                                                                               | 1.3                                                                                | 0.0                                                                                 | 0.2                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 67.3                                                                              | 32.9                                                                              | 38.1                                                                              | 63.1                                                                              | 38.9                                                                              | 21.3                                                                              | 30.8                                                                               | 0.0                                                                                 | 29.6                                                                                | 31.6                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | C                                                                                 | D                                                                                 | E                                                                                 | D                                                                                 | C                                                                                 | C                                                                                  | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 2454                                                                              |                                                                                   |                                                                                   |                                                                                   | 1958                                                                              |                                                                                   |                                                                                    |                                                                                     | 65                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 34.8                                                                              |                                                                                   |                                                                                   |                                                                                   | 39.5                                                                              |                                                                                   |                                                                                    |                                                                                     | 30.7                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              | 68.4                                                                              |                                                                                   | 40.6                                                                              | 5.1                                                                               | 74.3                                                                              |                                                                                    | 40.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 6.5                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               | * 4.2                                                                             | 6.5                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.8                                                                               | * 62                                                                              |                                                                                   | 36.0                                                                              | * 5                                                                               | 63.7                                                                              |                                                                                    | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+l1), s | 5.2                                                                               | 51.4                                                                              |                                                                                   | 5.3                                                                               | 2.4                                                                               | 42.9                                                                              |                                                                                    | 4.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 9.8                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 15.9                                                                              |                                                                                    | 0.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 36.8 |
| HCM 6th LOS        | D    |

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/22/2019



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | Ø6   |
|----------------------|------|-------|------|-------|-------|-------|------|
| Lane Configurations  |      |       |      |       |       |       |      |
| Traffic Volume (vph) | 3    | 2294  | 3    | 1926  | 5     | 0     |      |
| Future Volume (vph)  | 3    | 2294  | 3    | 1926  | 5     | 0     |      |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    |      |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     | 6    |
| Permitted Phases     |      |       |      |       | 2     |       |      |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     |      |
| Switch Phase         |      |       |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.2  | 23.5  | 9.2  | 23.5  | 14.6  | 14.6  | 14.6 |
| Total Split (s)      | 10.0 | 95.0  | 10.0 | 95.0  | 15.0  | 15.0  | 15.0 |
| Total Split (%)      | 8.3% | 79.2% | 8.3% | 79.2% | 12.5% | 12.5% | 13%  |
| Yellow Time (s)      | 3.2  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   |      |
| Total Lost Time (s)  | 4.2  | 6.5   | 4.2  | 6.5   |       | 4.6   |      |
| Lead/Lag             | Lag  | Lead  | Lag  | Lead  |       |       |      |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |      |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|      |        |      |
|------|--------|------|
| Ø2   | Ø4 (R) | Ø3   |
| 15 s | 95 s   | 10 s |
| Ø6   | Ø8 (R) | Ø7   |
| 15 s | 95 s   | 10 s |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |                                                                                   |                                                                                    |   |                                                                                     |                                                                                     |   |                                                                                     |
| Traffic Volume (veh/h)       | 3                                                                                 | 2294                                                                                                                                                                                                                                                  | 1                                                                                 | 3                                                                                 | 1926                                                                                                                                                                                                                                                  | 0                                                                                 | 5                                                                                  | 0                                                                                                                                                                       | 2                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2294                                                                                                                                                                                                                                                  | 1                                                                                 | 3                                                                                 | 1926                                                                                                                                                                                                                                                  | 0                                                                                 | 5                                                                                  | 0                                                                                                                                                                       | 2                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                                                                                                         |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2493                                                                                                                                                                                                                                                  | 1                                                                                 | 3                                                                                 | 2093                                                                                                                                                                                                                                                  | 0                                                                                 | 5                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                                                                                                    | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 221                                                                               | 3950                                                                                                                                                                                                                                                  | 2                                                                                 | 221                                                                               | 3825                                                                                                                                                                                                                                                  | 0                                                                                 | 78                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 24                                                                                                                                                                      | 0                                                                                   |
| Arrive On Green              | 0.24                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.12                                                                              | 0.74                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.01                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5355                                                                                                                                                                                                                                                  | 2                                                                                 | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Grp Volume(v), veh/h         | 3                                                                                 | 1610                                                                                                                                                                                                                                                  | 884                                                                               | 3                                                                                 | 2093                                                                                                                                                                                                                                                  | 0                                                                                 | 5                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1900                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.2                                                                               | 21.3                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.2                                                                               | 21.3                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 0.00                                                                                | 0.00                                                                                |                                                                                                                                                                         | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 221                                                                               | 2550                                                                                                                                                                                                                                                  | 1401                                                                              | 221                                                                               | 3825                                                                                                                                                                                                                                                  | 0                                                                                 | 78                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 24                                                                                                                                                                      | 0                                                                                   |
| V/C Ratio(X)                 | 0.01                                                                              | 0.63                                                                                                                                                                                                                                                  | 0.63                                                                              | 0.01                                                                              | 0.55                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.06                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 221                                                                               | 2550                                                                                                                                                                                                                                                  | 1401                                                                              | 221                                                                               | 3825                                                                                                                                                                                                                                                  | 0                                                                                 | 185                                                                                | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 165                                                                                                                                                                     | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 2.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(l)           | 0.36                                                                              | 0.36                                                                                                                                                                                                                                                  | 0.36                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 39.9                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 46.3                                                                              | 6.9                                                                                                                                                                                                                                                   | 0.0                                                                               | 58.7                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.4                                                                                                                                                                                                                                                   | 0.8                                                                               | 0.0                                                                               | 0.6                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.3                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.2                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.1                                                                               | 5.7                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 39.9                                                                              | 0.4                                                                                                                                                                                                                                                   | 0.8                                                                               | 46.3                                                                              | 7.5                                                                                                                                                                                                                                                   | 0.0                                                                               | 59.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                  | A                                                                                                                                                                       | A                                                                                   | A                                                                                   | A                                                                                                                                                                       | A                                                                                   |
| Approach Vol, veh/h          | 2497                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2096                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                  |                                                                                                                                                                         |                                                                                     | 0                                                                                   |                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        | 0.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 7.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 59.0                                                                               |                                                                                                                                                                         |                                                                                     | 0.0                                                                                 |                                                                                                                                                                         |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | E                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 3                                                                                 | 4                                                                                 |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                    | 7                                                                                                                                                                       | 8                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 6.1                                                                               |                                                                                                                                                                                                                                                       | 18.9                                                                              | 95.0                                                                              |                                                                                                                                                                                                                                                       | 6.1                                                                               |                                                                                    | 18.9                                                                                                                                                                    | 95.0                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       | 4.2                                                                               | * 6.5                                                                             |                                                                                                                                                                                                                                                       | 4.6                                                                               |                                                                                    | 4.2                                                                                                                                                                     | * 6.5                                                                               |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                                                                                                                                                                                       | 5.8                                                                               | * 89                                                                              |                                                                                                                                                                                                                                                       | 10.4                                                                              |                                                                                    | 5.8                                                                                                                                                                     | * 89                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.4                                                                               |                                                                                                                                                                                                                                                       | 2.2                                                                               | 2.0                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                    | 2.2                                                                                                                                                                     | 23.3                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               | 58.7                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                    | 0.0                                                                                                                                                                     | 39.2                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           | 3.8                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

Intersection

Int Delay, s/veh 0.7

| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↑↑↑  |      | ↖    | ↑↑↑  | ↖    | ↖    |
| Traffic Vol, veh/h       | 2286 | 12   | 23   | 1922 | 2    | 9    |
| Future Vol, veh/h        | 2286 | 12   | 23   | 1922 | 2    | 9    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 155  | -    | 0    | 0    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 2485 | 13   | 25   | 2089 | 2    | 10   |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 2498   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 5.3    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 3.1    |
| Pot Cap-1 Maneuver   | -      | -      | 71     |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 71     |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB | NB   |
|----------------------|----|----|------|
| HCM Control Delay, s | 0  | 1  | 98.9 |
| HCM LOS              |    |    | F    |

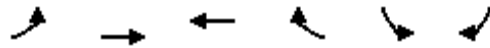
| Minor Lane/Major Mvmt | NBLn1    | NBLn2 | EBT | EBR | WBL   | WBT |
|-----------------------|----------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 11       | 143   | -   | -   | 71    | -   |
| HCM Lane V/C Ratio    | 0.198    | 0.068 | -   | -   | 0.352 | -   |
| HCM Control Delay (s) | \$ 400.1 | 32    | -   | -   | 81.1  | -   |
| HCM Lane LOS          | F        | D     | -   | -   | F     | -   |
| HCM 95th %tile Q(veh) | 0.5      | 0.2   | -   | -   | 1.3   | -   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/22/2019



| Lane Group           | EBL  | EBT   | WBT   | WBR   | SBL   | SBR  |
|----------------------|------|-------|-------|-------|-------|------|
| Lane Configurations  | ↰    | ↑↑↑   | ↑↑↑   | ↰     | ↰     | ↰    |
| Traffic Volume (vph) | 14   | 2421  | 1983  | 20    | 27    | 16   |
| Future Volume (vph)  | 14   | 2421  | 1983  | 20    | 27    | 16   |
| Turn Type            | Prot | NA    | NA    | Perm  | Prot  | Free |
| Protected Phases     | 7    | 4     | 8     |       | 6     |      |
| Permitted Phases     |      |       |       | 8     |       | Free |
| Detector Phase       | 7    | 4     | 8     | 8     | 6     |      |
| Switch Phase         |      |       |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  |      |
| Minimum Split (s)    | 9.2  | 28.5  | 30.5  | 30.5  | 26.6  |      |
| Total Split (s)      | 11.0 | 92.0  | 81.0  | 81.0  | 28.0  |      |
| Total Split (%)      | 9.2% | 76.7% | 67.5% | 67.5% | 23.3% |      |
| Yellow Time (s)      | 3.2  | 5.5   | 5.5   | 5.5   | 3.6   |      |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |      |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.2  | 6.5   | 6.5   | 6.5   | 4.6   |      |
| Lead/Lag             | Lead |       | Lag   | Lag   |       |      |
| Lead-Lag Optimize?   | Yes  |       | Yes   | Yes   |       |      |
| Recall Mode          | None | None  | None  | None  | C-Max |      |

### Intersection Summary

Cycle Length: 120

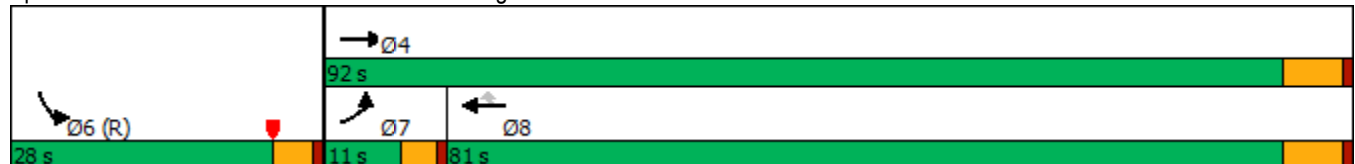
Actuated Cycle Length: 120

Offset: 48 (40%), Referenced to phase 2: and 6:SBL, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

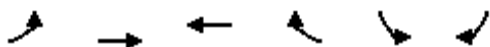
Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/22/2019



| Movement                     | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SBL                                                                               | SBR                                                                                 |      |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|
| Lane Configurations          |  |  |  |  |  |  |      |
| Traffic Volume (veh/h)       | 14                                                                                | 2421                                                                              | 1983                                                                              | 20                                                                                | 27                                                                                | 16                                                                                  |      |
| Future Volume (veh/h)        | 14                                                                                | 2421                                                                              | 1983                                                                              | 20                                                                                | 27                                                                                | 16                                                                                  |      |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |      |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   |                                                                                   | 0.98                                                                              | 1.00                                                                              | 1.00                                                                                |      |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                |      |
| Work Zone On Approach        |                                                                                   | No                                                                                | No                                                                                |                                                                                   | No                                                                                |                                                                                     |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                |      |
| Adj Flow Rate, veh/h         | 15                                                                                | 2660                                                                              | 2179                                                                              | 21                                                                                | 30                                                                                | 0                                                                                   |      |
| Peak Hour Factor             | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                |      |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |      |
| Cap, veh/h                   | 30                                                                                | 3474                                                                              | 3208                                                                              | 974                                                                               | 834                                                                               |                                                                                     |      |
| Arrive On Green              | 0.02                                                                              | 0.67                                                                              | 1.00                                                                              | 1.00                                                                              | 0.24                                                                              | 0.00                                                                                |      |
| Sat Flow, veh/h              | 1810                                                                              | 5358                                                                              | 5358                                                                              | 1575                                                                              | 3510                                                                              | 1610                                                                                |      |
| Grp Volume(v), veh/h         | 15                                                                                | 2660                                                                              | 2179                                                                              | 21                                                                                | 30                                                                                | 0                                                                                   |      |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1729                                                                              | 1575                                                                              | 1755                                                                              | 1610                                                                                |      |
| Q Serve(g_s), s              | 1.0                                                                               | 41.7                                                                              | 0.0                                                                               | 0.0                                                                               | 0.8                                                                               | 0.0                                                                                 |      |
| Cycle Q Clear(g_c), s        | 1.0                                                                               | 41.7                                                                              | 0.0                                                                               | 0.0                                                                               | 0.8                                                                               | 0.0                                                                                 |      |
| Prop In Lane                 | 1.00                                                                              |                                                                                   |                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                |      |
| Lane Grp Cap(c), veh/h       | 30                                                                                | 3474                                                                              | 3208                                                                              | 974                                                                               | 834                                                                               |                                                                                     |      |
| V/C Ratio(X)                 | 0.51                                                                              | 0.77                                                                              | 0.68                                                                              | 0.02                                                                              | 0.04                                                                              |                                                                                     |      |
| Avail Cap(c_a), veh/h        | 103                                                                               | 3696                                                                              | 3220                                                                              | 978                                                                               | 834                                                                               |                                                                                     |      |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                                |      |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 0.19                                                                              | 0.19                                                                              | 1.00                                                                              | 0.00                                                                                |      |
| Uniform Delay (d), s/veh     | 58.5                                                                              | 13.4                                                                              | 0.0                                                                               | 0.0                                                                               | 35.2                                                                              | 0.0                                                                                 |      |
| Incr Delay (d2), s/veh       | 4.9                                                                               | 1.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                                 |      |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |      |
| %ile BackOfQ(50%),veh/ln     | 0.5                                                                               | 13.1                                                                              | 0.0                                                                               | 0.0                                                                               | 0.4                                                                               | 0.0                                                                                 |      |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |      |
| LnGrp Delay(d),s/veh         | 63.4                                                                              | 14.5                                                                              | 0.1                                                                               | 0.0                                                                               | 35.2                                                                              | 0.0                                                                                 |      |
| LnGrp LOS                    | E                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 |                                                                                     |      |
| Approach Vol, veh/h          |                                                                                   | 2675                                                                              | 2200                                                                              |                                                                                   | 30                                                                                | A                                                                                   |      |
| Approach Delay, s/veh        |                                                                                   | 14.7                                                                              | 0.1                                                                               |                                                                                   | 35.2                                                                              |                                                                                     |      |
| Approach LOS                 |                                                                                   | B                                                                                 | A                                                                                 |                                                                                   | D                                                                                 |                                                                                     |      |
| Timer - Assigned Phs         |                                                                                   |                                                                                   |                                                                                   | 4                                                                                 | 6                                                                                 | 7                                                                                   | 8    |
| Phs Duration (G+Y+Rc), s     |                                                                                   |                                                                                   |                                                                                   | 86.9                                                                              | 33.1                                                                              | 6.2                                                                                 | 80.7 |
| Change Period (Y+Rc), s      |                                                                                   |                                                                                   |                                                                                   | 6.5                                                                               | 4.6                                                                               | * 4.2                                                                               | 6.5  |
| Max Green Setting (Gmax), s  |                                                                                   |                                                                                   |                                                                                   | 85.5                                                                              | 23.4                                                                              | * 6.8                                                                               | 74.5 |
| Max Q Clear Time (g_c+I1), s |                                                                                   |                                                                                   |                                                                                   | 43.7                                                                              | 2.8                                                                               | 3.0                                                                                 | 2.0  |
| Green Ext Time (p_c), s      |                                                                                   |                                                                                   |                                                                                   | 36.7                                                                              | 0.0                                                                               | 0.0                                                                                 | 44.8 |

### Intersection Summary

|                    |     |
|--------------------|-----|
| HCM 6th Ctrl Delay | 8.3 |
| HCM 6th LOS        | A   |

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/22/2019

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (vph) | 148                                                                               | 1612                                                                              | 516                                                                               | 156                                                                               | 1334                                                                              | 146                                                                               | 349                                                                                | 279                                                                                 | 158                                                                                 | 189                                                                                 | 654                                                                                 | 310                                                                                 |
| Future Volume (vph)  | 148                                                                               | 1612                                                                              | 516                                                                               | 156                                                                               | 1334                                                                              | 146                                                                               | 349                                                                                | 279                                                                                 | 158                                                                                 | 189                                                                                 | 654                                                                                 | 310                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                                | 10.0                                                                                | 5.0                                                                                 | 5.0                                                                                 | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                                | 15.8                                                                                | 8.7                                                                                 | 8.7                                                                                 | 49.8                                                                                | 49.8                                                                                |
| Total Split (s)      | 12.2                                                                              | 48.2                                                                              | 48.2                                                                              | 9.0                                                                               | 45.0                                                                              | 45.0                                                                              | 11.8                                                                               | 45.5                                                                                | 9.0                                                                                 | 17.3                                                                                | 51.0                                                                                | 51.0                                                                                |
| Total Split (%)      | 10.2%                                                                             | 40.2%                                                                             | 40.2%                                                                             | 7.5%                                                                              | 37.5%                                                                             | 37.5%                                                                             | 9.8%                                                                               | 37.9%                                                                               | 7.5%                                                                                | 14.4%                                                                               | 42.5%                                                                               | 42.5%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                                | 4.8                                                                                 | 3.2                                                                                 | 3.2                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                                | 1.0                                                                                 | 0.5                                                                                 | 0.5                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                                | 5.8                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                                | Lag                                                                                 | Lead                                                                                | Lead                                                                                | Lead                                                                                | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                               | Max                                                                                 | None                                                                                | None                                                                                | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

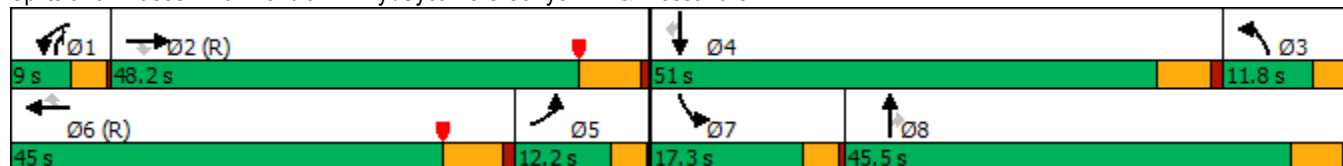
Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/22/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |  |    |  |  |  |  |  |
| Traffic Volume (veh/h)       | 148                                                                               | 1612                                                                              | 516                                                                               | 156                                                                               | 1334                                                                              | 146                                                                               | 349                                                                                 | 279                                                                                 | 158                                                                                 | 189                                                                                 | 654                                                                                 | 310                                                                                 |
| Future Volume (veh/h)        | 148                                                                               | 1612                                                                              | 516                                                                               | 156                                                                               | 1334                                                                              | 146                                                                               | 349                                                                                 | 279                                                                                 | 158                                                                                 | 189                                                                                 | 654                                                                                 | 310                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 164                                                                               | 1791                                                                              | 573                                                                               | 173                                                                               | 1482                                                                              | 162                                                                               | 388                                                                                 | 310                                                                                 | 176                                                                                 | 210                                                                                 | 727                                                                                 | 344                                                                                 |
| Peak Hour Factor             | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 1589                                                                              | 6112                                                                              | 1897                                                                              | 155                                                                               | 1664                                                                              | 517                                                                               | 237                                                                                 | 1390                                                                                | 1216                                                                                | 269                                                                                 | 1360                                                                                | 606                                                                                 |
| Arrive On Green              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.04                                                                              | 0.32                                                                              | 0.32                                                                              | 0.07                                                                                | 0.39                                                                                | 0.39                                                                                | 0.08                                                                                | 0.38                                                                                | 0.38                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                              | 1610                                                                              | 3510                                                                              | 5187                                                                              | 1610                                                                              | 3510                                                                                | 3610                                                                                | 2834                                                                                | 3510                                                                                | 3610                                                                                | 1610                                                                                |
| Grp Volume(v), veh/h         | 164                                                                               | 1791                                                                              | 573                                                                               | 173                                                                               | 1482                                                                              | 162                                                                               | 388                                                                                 | 310                                                                                 | 176                                                                                 | 210                                                                                 | 727                                                                                 | 344                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1610                                                                              | 1755                                                                              | 1729                                                                              | 1610                                                                              | 1755                                                                                | 1805                                                                                | 1417                                                                                | 1755                                                                                | 1805                                                                                | 1610                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 5.3                                                                               | 32.6                                                                              | 18.3                                                                              | 8.1                                                                                 | 6.9                                                                                 | 4.5                                                                                 | 7.1                                                                                 | 18.9                                                                                | 20.3                                                                                |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 5.3                                                                               | 32.6                                                                              | 18.3                                                                              | 8.1                                                                                 | 6.9                                                                                 | 4.5                                                                                 | 7.1                                                                                 | 18.9                                                                                | 20.3                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 1589                                                                              | 6112                                                                              | 1897                                                                              | 155                                                                               | 1664                                                                              | 517                                                                               | 237                                                                                 | 1390                                                                                | 1216                                                                                | 269                                                                                 | 1360                                                                                | 606                                                                                 |
| V/C Ratio(X)                 | 0.10                                                                              | 0.29                                                                              | 0.30                                                                              | 1.12                                                                              | 0.89                                                                              | 0.31                                                                              | 1.64                                                                                | 0.22                                                                                | 0.14                                                                                | 0.78                                                                                | 0.53                                                                                | 0.57                                                                                |
| Avail Cap(c_a), veh/h        | 1589                                                                              | 6112                                                                              | 1897                                                                              | 155                                                                               | 1664                                                                              | 517                                                                               | 237                                                                                 | 1390                                                                                | 1216                                                                                | 398                                                                                 | 1360                                                                                | 606                                                                                 |
| HCM Platoon Ratio            | 1.33                                                                              | 1.33                                                                              | 1.33                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.63                                                                              | 0.63                                                                              | 0.63                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 57.3                                                                              | 38.7                                                                              | 124.4                                                                             | 56.0                                                                                | 24.8                                                                                | 20.8                                                                                | 54.4                                                                                | 29.2                                                                                | 29.6                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.1                                                                               | 0.3                                                                               | 106.7                                                                             | 7.6                                                                               | 1.6                                                                               | 305.2                                                                               | 0.4                                                                                 | 0.3                                                                                 | 3.0                                                                                 | 1.5                                                                                 | 3.8                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 4.6                                                                               | 14.4                                                                              | 7.8                                                                               | 13.5                                                                                | 2.9                                                                                 | 1.5                                                                                 | 3.2                                                                                 | 8.1                                                                                 | 8.2                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 0.1                                                                               | 0.3                                                                               | 164.1                                                                             | 46.4                                                                              | 126.0                                                                             | 361.1                                                                               | 25.2                                                                                | 21.1                                                                                | 57.5                                                                                | 30.7                                                                                | 33.5                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                 | A                                                                                 | F                                                                                 | D                                                                                 | F                                                                                 | F                                                                                   | C                                                                                   | C                                                                                   | E                                                                                   | C                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 2528                                                                              |                                                                                   |                                                                                   | 1817                                                                              |                                                                                   |                                                                                   |                                                                                     | 874                                                                                 |                                                                                     |                                                                                     | 1281                                                                                |                                                                                     |
| Approach Delay, s/veh        | 0.1                                                                               |                                                                                   |                                                                                   | 64.7                                                                              |                                                                                   |                                                                                   |                                                                                     | 173.5                                                                               |                                                                                     |                                                                                     | 35.8                                                                                |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                     | F                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 9.0                                                                               | 150.0                                                                             | 13.9                                                                              | 51.0                                                                              | 114.0                                                                             | 45.0                                                                              | 12.9                                                                                | 52.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                               | 5.8                                                                               | * 5.8                                                                             | 6.5                                                                               | * 6.5                                                                             | 3.7                                                                                 | 5.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 5.3                                                                               | 41.7                                                                              | 8.1                                                                               | * 45                                                                              | 8.5                                                                               | * 39                                                                              | 13.6                                                                                | 39.7                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 7.3                                                                               | 2.0                                                                               | 10.1                                                                              | 22.3                                                                              | 2.0                                                                               | 34.6                                                                              | 9.1                                                                                 | 8.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 29.8                                                                              | 0.0                                                                               | 6.0                                                                               | 0.1                                                                               | 3.3                                                                               | 0.1                                                                                 | 2.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 48.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↰     | ↰     |
| Traffic Volume (vph) | 1536  | 1332  | 216   | 0     | 357   |
| Future Volume (vph)  | 1536  | 1332  | 216   | 0     | 357   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 58.0  | 58.0  | 27.0  | 27.0  | 27.0  |
| Total Split (%)      | 68.2% | 68.2% | 31.8% | 31.8% | 31.8% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 33 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.

|          |      |      |
|----------|------|------|
| → Ø2 (R) | 58 s | 27 s |
| ← Ø6 (R) | 58 s |      |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/22/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     | ↗                                                                                   | ↕                                                                                   | ↖                                                                                   |
| Traffic Volume (veh/h)       | 0                                                                                 | 1536                                                                              | 424                                                                               | 0                                                                                 | 1332                                                                              | 131                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 216                                                                                 | 0                                                                                   | 357                                                                                 |
| Future Volume (veh/h)        | 0                                                                                 | 1536                                                                              | 424                                                                               | 0                                                                                 | 1332                                                                              | 131                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 216                                                                                 | 0                                                                                   | 357                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              |                                                                                    |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 0                                                                                 | 1634                                                                              | 414                                                                               | 0                                                                                 | 1417                                                                              | 137                                                                               |                                                                                    |                                                                                     |                                                                                     | 323                                                                                 | 0                                                                                   | 176                                                                                 |
| Peak Hour Factor             | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 0                                                                                 | 3015                                                                              | 752                                                                               | 0                                                                                 | 3513                                                                              | 340                                                                               |                                                                                    |                                                                                     |                                                                                     | 522                                                                                 | 0                                                                                   | 232                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.73                                                                              | 0.73                                                                              | 0.00                                                                              | 0.73                                                                              | 0.73                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.14                                                                                | 0.00                                                                                | 0.14                                                                                |
| Sat Flow, veh/h              | 0                                                                                 | 4289                                                                              | 1028                                                                              | 0                                                                                 | 4970                                                                              | 464                                                                               |                                                                                    |                                                                                     |                                                                                     | 3619                                                                                | 0                                                                                   | 1607                                                                                |
| Grp Volume(v), veh/h         | 0                                                                                 | 1368                                                                              | 680                                                                               | 0                                                                                 | 1021                                                                              | 533                                                                               |                                                                                    |                                                                                     |                                                                                     | 323                                                                                 | 0                                                                                   | 176                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 0                                                                                 | 1729                                                                              | 1688                                                                              | 0                                                                                 | 1729                                                                              | 1805                                                                              |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 1607                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 14.9                                                                              | 15.4                                                                              | 0.0                                                                               | 9.5                                                                               | 9.5                                                                               |                                                                                    |                                                                                     |                                                                                     | 7.1                                                                                 | 0.0                                                                                 | 8.9                                                                                 |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 14.9                                                                              | 15.4                                                                              | 0.0                                                                               | 9.5                                                                               | 9.5                                                                               |                                                                                    |                                                                                     |                                                                                     | 7.1                                                                                 | 0.0                                                                                 | 8.9                                                                                 |
| Prop In Lane                 | 0.00                                                                              |                                                                                   | 0.61                                                                              | 0.00                                                                              |                                                                                   | 0.26                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 0                                                                                 | 2532                                                                              | 1236                                                                              | 0                                                                                 | 2532                                                                              | 1321                                                                              |                                                                                    |                                                                                     |                                                                                     | 522                                                                                 | 0                                                                                   | 232                                                                                 |
| V/C Ratio(X)                 | 0.00                                                                              | 0.54                                                                              | 0.55                                                                              | 0.00                                                                              | 0.40                                                                              | 0.40                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.62                                                                                | 0.00                                                                                | 0.76                                                                                |
| Avail Cap(c_a), veh/h        | 0                                                                                 | 2532                                                                              | 1236                                                                              | 0                                                                                 | 2532                                                                              | 1321                                                                              |                                                                                    |                                                                                     |                                                                                     | 937                                                                                 | 0                                                                                   | 416                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.80                                                                              | 0.80                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 5.0                                                                               | 5.1                                                                               | 0.0                                                                               | 4.3                                                                               | 4.3                                                                               |                                                                                    |                                                                                     |                                                                                     | 34.2                                                                                | 0.0                                                                                 | 34.9                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.8                                                                               | 1.8                                                                               | 0.0                                                                               | 0.4                                                                               | 0.7                                                                               |                                                                                    |                                                                                     |                                                                                     | 1.2                                                                                 | 0.0                                                                                 | 5.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 2.9                                                                               | 3.2                                                                               | 0.0                                                                               | 1.8                                                                               | 2.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 3.0                                                                                 | 0.0                                                                                 | 3.6                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 5.9                                                                               | 6.9                                                                               | 0.0                                                                               | 4.7                                                                               | 5.1                                                                               |                                                                                    |                                                                                     |                                                                                     | 35.4                                                                                | 0.0                                                                                 | 40.0                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2048                                                                              |                                                                                   |                                                                                   | 1554                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | 499                                                                                 |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 6.2                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | 37.0                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 67.7                                                                              |                                                                                   |                                                                                   | 17.3                                                                              |                                                                                   |                                                                                   | 67.7                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 52.5                                                                              |                                                                                   |                                                                                   | 22.0                                                                              |                                                                                   |                                                                                   | 52.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 17.4                                                                              |                                                                                   |                                                                                   | 10.9                                                                              |                                                                                   |                                                                                   | 11.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 18.6                                                                              |                                                                                   |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   | 12.6                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   |                                                                                   | 9.4                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBL   | EBT   | WBT   | WBR   | NBL   | NBT   | NBR   |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations  |       |       |       |       |       |       |       |
| Traffic Volume (vph) | 195   | 1501  | 945   | 206   | 598   | 8     | 303   |
| Future Volume (vph)  | 195   | 1501  | 945   | 206   | 598   | 8     | 303   |
| Turn Type            | Prot  | NA    | NA    | Perm  | Split | NA    | Perm  |
| Protected Phases     | 5     | 2     | 6     |       | 8     | 8     |       |
| Permitted Phases     |       |       |       | 6     |       |       | 8     |
| Detector Phase       | 5     | 2     | 6     | 6     | 8     | 8     | 8     |
| Switch Phase         |       |       |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 9.5   | 10.5  | 33.5  | 33.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 23.0  | 52.0  | 33.5  | 33.5  | 33.0  | 33.0  | 33.0  |
| Total Split (%)      | 25.7% | 58.1% | 37.4% | 37.4% | 36.9% | 36.9% | 36.9% |
| Yellow Time (s)      | 3.5   | 4.5   | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.5   | 5.5   | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             | Lead  |       | Lag   | Lag   |       |       |       |
| Lead-Lag Optimize?   | Yes   |       | Yes   | Yes   |       |       |       |
| Recall Mode          | None  | C-Max | C-Max | C-Max | Max   | Max   | Max   |

### Intersection Summary

Cycle Length: 89.5

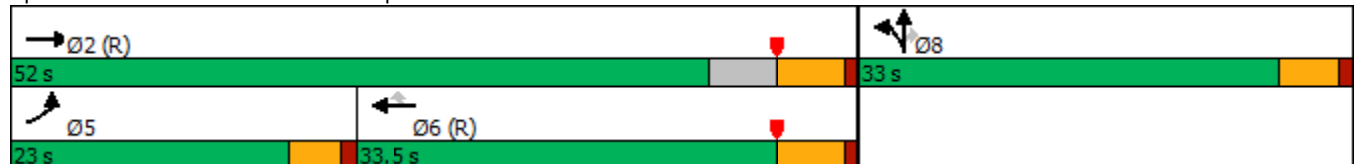
Actuated Cycle Length: 89.5

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |   |                                                                                      |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)       | 195                                                                               | 1501                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 945                                                                                                                                                                                                                                                   | 206                                                                               | 598                                                                                 | 8                                                                                                                                                                       | 303                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 195                                                                               | 1501                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 945                                                                                                                                                                                                                                                   | 206                                                                               | 598                                                                                 | 8                                                                                                                                                                       | 303                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h         | 207                                                                               | 1597                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1005                                                                                                                                                                                                                                                  | 103                                                                               | 688                                                                                 | 0                                                                                                                                                                       | 106                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor             | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                                | 0.94                                                                                                                                                                    | 0.94                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                   | 245                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2007                                                                                                                                                                                                                                                  | 610                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green              | 0.14                                                                              | 0.57                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.39                                                                                                                                                                                                                                                  | 0.39                                                                              | 0.31                                                                                | 0.00                                                                                                                                                                    | 0.31                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h              | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1576                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h         | 207                                                                               | 1597                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1005                                                                                                                                                                                                                                                  | 103                                                                               | 688                                                                                 | 0                                                                                                                                                                       | 106                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1576                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 10.1                                                                              | 17.1                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 13.3                                                                                                                                                                                                                                                  | 3.9                                                                               | 14.6                                                                                | 0.0                                                                                                                                                                     | 4.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 10.1                                                                              | 17.1                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 13.3                                                                                                                                                                                                                                                  | 3.9                                                                               | 14.6                                                                                | 0.0                                                                                                                                                                     | 4.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 245                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2007                                                                                                                                                                                                                                                  | 610                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.84                                                                              | 0.54                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.50                                                                                                                                                                                                                                                  | 0.17                                                                              | 0.61                                                                                | 0.00                                                                                                                                                                    | 0.21                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 372                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2007                                                                                                                                                                                                                                                  | 610                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.77                                                                              | 0.77                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 38.0                                                                              | 11.9                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 21.0                                                                                                                                                                                                                                                  | 18.1                                                                              | 26.4                                                                                | 0.0                                                                                                                                                                     | 22.9                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 7.1                                                                               | 0.5                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.9                                                                                                                                                                                                                                                   | 0.6                                                                               | 2.5                                                                                 | 0.0                                                                                                                                                                     | 1.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 4.6                                                                               | 5.3                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 4.9                                                                                                                                                                                                                                                   | 1.3                                                                               | 6.2                                                                                 | 0.0                                                                                                                                                                     | 1.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 45.1                                                                              | 12.4                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 21.9                                                                                                                                                                                                                                                  | 18.7                                                                              | 28.8                                                                                | 0.0                                                                                                                                                                     | 23.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | D                                                                                 | B                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | B                                                                                 | C                                                                                   | A                                                                                                                                                                       | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 1804                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1108                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 794                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 16.2                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 21.6                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 28.2                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 57.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 16.7                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 40.3                                                                                |                                                                                                                                                                         |                                                                                     | 33.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                                 |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 46.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 18.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 28.0                                                                                |                                                                                                                                                                         |                                                                                     | 28.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 19.1                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 12.1                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 15.3                                                                                |                                                                                                                                                                         |                                                                                     | 16.6                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 12.2                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.2                                                                                 |                                                                                                                                                                         |                                                                                     | 2.3                                                                                 |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 20.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### **APPENDIX 3.3:**

### **EXISTING (2019) CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS**

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### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday PM Peak Hour**

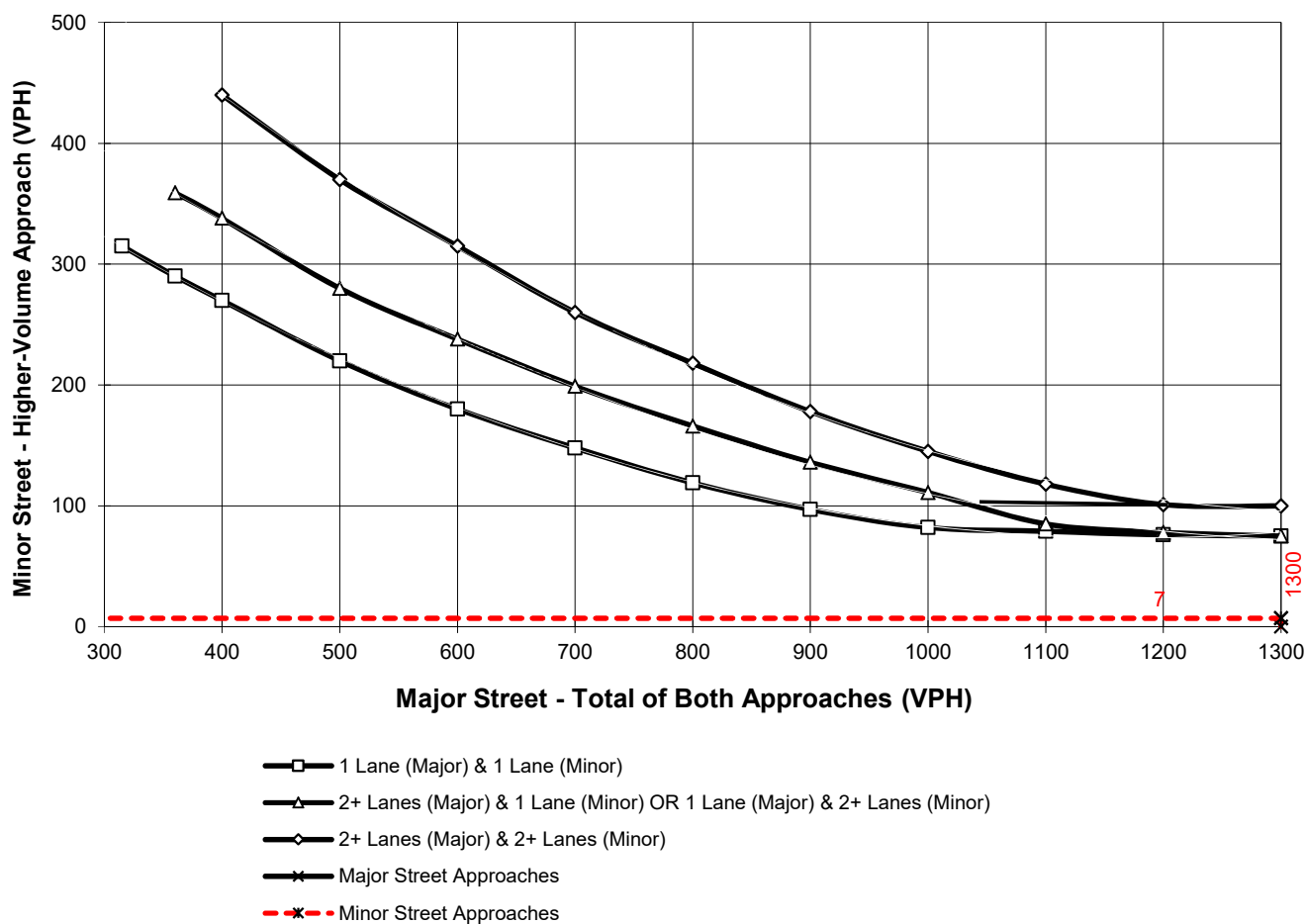
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **4227**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Private Driveway**

High Volume Approach (VPH) = **7**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2019) Conditions - Weekday AM Peak Hour**

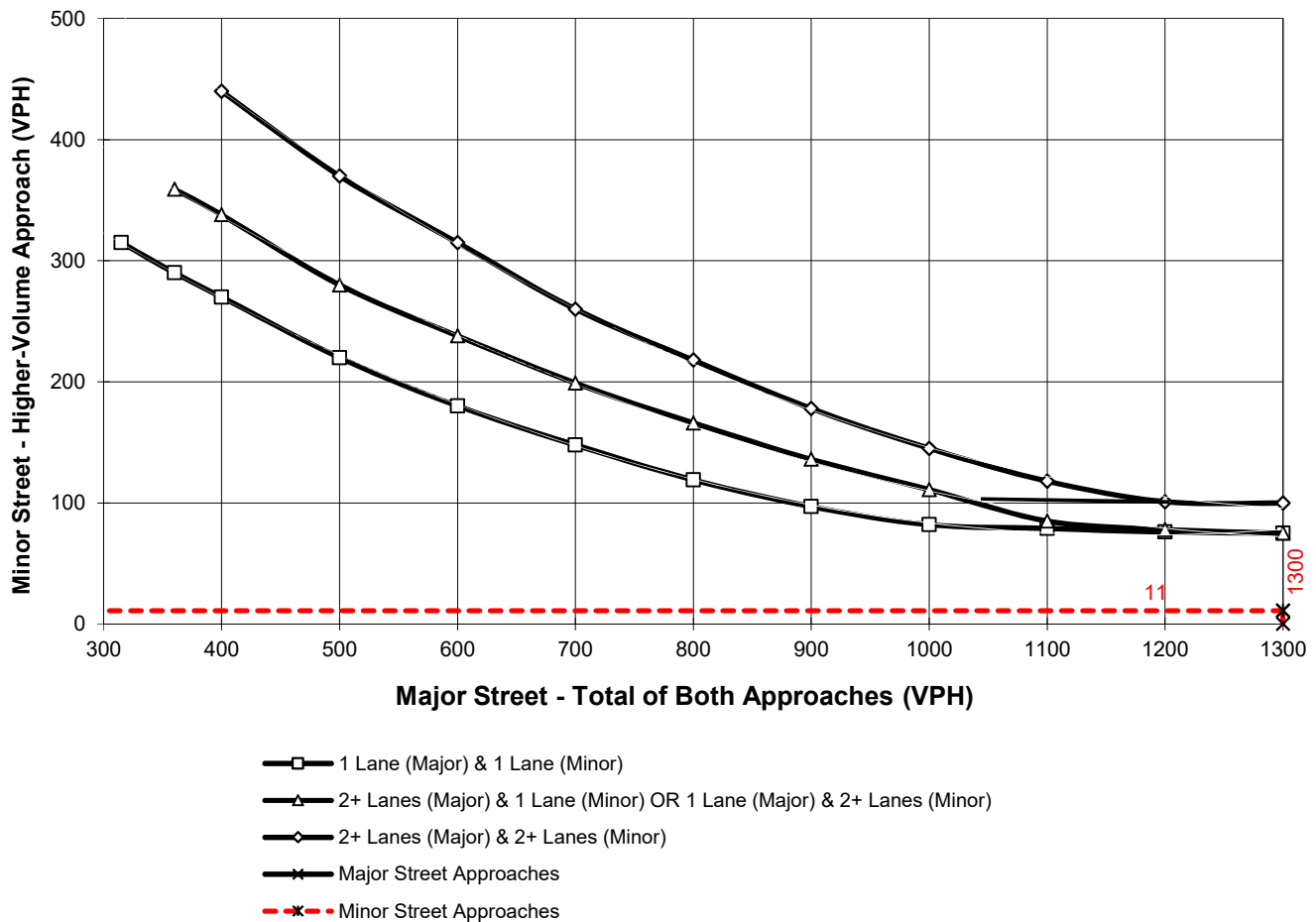
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **4243**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Vista Grande**

High Volume Approach (VPH) = **11**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes  
and 75 vph applies as the lower threshold for a minor-street approach with one lane

## **APPENDIX 3.4:**

### **EXISTING (2019) CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS**

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## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 1066 | 2693 | 188  | 176  | 173  |
| v/c Ratio               | 0.30 | 0.74 | 0.67 | 0.65 | 0.63 |
| Control Delay           | 3.5  | 3.6  | 44.9 | 38.3 | 36.9 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 3.5  | 3.6  | 44.9 | 38.3 | 36.9 |
| Queue Length 50th (ft)  | 43   | 114  | 100  | 79   | 73   |
| Queue Length 95th (ft)  | 66   | 105  | 166  | 147  | 137  |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3584 | 3658 | 343  | 322  | 328  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.30 | 0.74 | 0.55 | 0.55 | 0.53 |
| Intersection Summary    |      |      |      |      |      |

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 64   | 909  | 1614 | 143  | 486  | 489  | 200  |
| v/c Ratio               | 0.56 | 0.34 | 0.75 | 0.19 | 0.78 | 0.74 | 0.32 |
| Control Delay           | 54.1 | 14.1 | 24.2 | 3.8  | 34.3 | 26.3 | 11.0 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 54.1 | 14.1 | 24.2 | 3.8  | 34.3 | 26.3 | 11.0 |
| Queue Length 50th (ft)  | 32   | 121  | 271  | 0    | 237  | 195  | 35   |
| Queue Length 95th (ft)  | #67  | 150  | 330  | 34   | #400 | 327  | 88   |
| Internal Link Dist (ft) |      | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200  |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 116  | 2654 | 2166 | 742  | 625  | 662  | 625  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.55 | 0.34 | 0.75 | 0.19 | 0.78 | 0.74 | 0.32 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 2085 | 1556 | 207  | 202  | 201  |
| v/c Ratio               | 0.60 | 0.44 | 0.64 | 0.63 | 0.61 |
| Control Delay           | 8.0  | 6.8  | 40.1 | 31.9 | 31.0 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 8.0  | 6.8  | 40.1 | 31.9 | 31.0 |
| Queue Length 50th (ft)  | 171  | 115  | 108  | 81   | 77   |
| Queue Length 95th (ft)  | 267  | 179  | 167  | 146  | 138  |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3481 | 3522 | 443  | 418  | 428  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.60 | 0.44 | 0.47 | 0.48 | 0.47 |
| Intersection Summary    |      |      |      |      |      |

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 207  | 1597 | 1005 | 219  | 337  | 340  | 290  |
| v/c Ratio               | 0.71 | 0.54 | 0.54 | 0.31 | 0.63 | 0.66 | 0.54 |
| Control Delay           | 48.3 | 12.8 | 24.9 | 4.6  | 32.5 | 33.4 | 21.9 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 48.3 | 12.8 | 24.9 | 4.6  | 32.5 | 33.4 | 21.9 |
| Queue Length 50th (ft)  | 111  | 190  | 165  | 0    | 170  | 178  | 97   |
| Queue Length 95th (ft)  | 176  | 230  | 220  | 49   | 267  | 283  | 183  |
| Internal Link Dist (ft) |      | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200  |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 373  | 2955 | 1850 | 705  | 536  | 515  | 538  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.55 | 0.54 | 0.54 | 0.31 | 0.63 | 0.66 | 0.54 |
| Intersection Summary    |      |      |      |      |      |      |      |

**APPENDIX 4.1:**

**POST PROCESSING WORKSHEETS**

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Project: Sycamore Hills Distribution Center  
 Scenario: Horizon Year (2040) Without Project

Job #: 12014  
 Analyst: RV  
 Date: 5/22/2019

LOCATION: Barton St. & Alessandro Bl.  
 FORECAST YEAR: 2040

| INDIVIDUAL TURN VOLUME GROWTH REVIEW |                  |                         |               |             |          |                         |               |             |          |
|--------------------------------------|------------------|-------------------------|---------------|-------------|----------|-------------------------|---------------|-------------|----------|
| APPROACH                             | TURNING MOVEMENT | AM PEAK HOUR INPUT DATA |               |             |          | PM PEAK HOUR INPUT DATA |               |             |          |
|                                      |                  | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE |
| NORTH BOUND                          | Left             | 56                      | 58            | 2           | 4%       | 42                      | 40            | -2          | -5%      |
|                                      | Through          | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Right            | 39                      | 42            | 3           | 8%       | 32                      | 30            | -2          | -6%      |
|                                      | NB Total         | 95                      | 100           | 5           | 5%       | 74                      | 70            | -4          | -5%      |
| SOUTH BOUND                          | Left             | 1                       | 0             | -1          | -100%    | 3                       | 3             | 0           | 0%       |
|                                      | Through          | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Right            | 2                       | 0             | -2          | -100%    | 7                       | 7             | 0           | 0%       |
|                                      | SB Total         | 3                       | 0             | -3          | -100%    | 10                      | 10            | 0           | 0%       |
| EAST BOUND                           | Left             | 2                       | 0             | -2          | -100%    | 8                       | 7             | -1          | -13%     |
|                                      | Through          | 1,109                   | 1,628         | 519         | 47%      | 2,194                   | 3,387         | 1,193       | 54%      |
|                                      | Right            | 11                      | 12            | 1           | 9%       | 29                      | 30            | 1           | 3%       |
|                                      | EB Total         | 1,122                   | 1,640         | 518         | 46%      | 2,231                   | 3,424         | 1,193       | 53%      |
| WEST BOUND                           | Left             | 25                      | 28            | 3           | 12%      | 42                      | 40            | -2          | -5%      |
|                                      | Through          | 2,353                   | 3,362         | 1,009       | 43%      | 1,818                   | 2,583         | 765         | 42%      |
|                                      | Right            | 2                       | 0             | -2          | -100%    | 3                       | 3             | 0           | 0%       |
|                                      | WB Total         | 2,380                   | 3,390         | 1,010       | 42%      | 1,863                   | 2,626         | 763         | 41%      |
| TOTAL ENTERING VOLUME                |                  | 3,600                   | 5,130         | 1530        | 43%      | 4,178                   | 6,130         | 1952        | 47%      |

| FORECAST PEAK HOUR TO ADT COMPARISON |          |         |        |                |         |         |
|--------------------------------------|----------|---------|--------|----------------|---------|---------|
|                                      |          | VOLUMES |        | PERCENT OF ADT |         | ADT     |
|                                      |          | AM      | PM     | AM             | PM      |         |
| North Leg                            | Inbound  | 0       | 10     | #DIV/0!        | #DIV/0! | -       |
| North Leg                            | Outbound | 0       | 10     |                |         |         |
| North Leg                            | TOTAL    | 0       | 20     |                |         |         |
|                                      |          |         |        |                |         |         |
| South Leg                            | Inbound  | 100     | 70     | #DIV/0!        | #DIV/0! | -       |
| South Leg                            | Outbound | 40      | 70     |                |         |         |
| South Leg                            | TOTAL    | 140     | 140    |                |         |         |
|                                      |          |         |        |                |         |         |
| East Leg                             | Inbound  | 3,390   | 2,626  | 7%             | 9%      | 70,194  |
| East Leg                             | Outbound | 1,670   | 3,420  |                |         |         |
| East Leg                             | TOTAL    | 5,060   | 6,046  |                |         |         |
|                                      |          |         |        |                |         |         |
| West Leg                             | Inbound  | 1,640   | 3,424  | 7%             | 9%      | 70,194  |
| West Leg                             | Outbound | 3,420   | 2,630  |                |         |         |
| West Leg                             | TOTAL    | 5,060   | 6,054  |                |         |         |
|                                      |          |         |        |                |         |         |
| OVERALL TOTAL                        |          | 10,260  | 12,260 | 7%             | 9%      | 140,388 |

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Project: Sycamore Hills Distribution Center  
Scenario: Horizon Year (2040) Without Project

Job #: 12014  
Analyst: RV  
Date: 5/22/2019

LOCATION: San Gorgonio Dr. & Alessandro Bl.  
FORECAST YEAR: 2040

| INDIVIDUAL TURN VOLUME GROWTH REVIEW |                  |                         |               |             |          |                         |               |             |          |
|--------------------------------------|------------------|-------------------------|---------------|-------------|----------|-------------------------|---------------|-------------|----------|
| APPROACH                             | TURNING MOVEMENT | AM PEAK HOUR INPUT DATA |               |             |          | PM PEAK HOUR INPUT DATA |               |             |          |
|                                      |                  | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE |
| NORTH BOUND                          | Left             | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Through          | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Right            | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | NB Total         | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
| SOUTH BOUND                          | Left             | 12                      | 14            | 2           | 17%      | 20                      | 23            | 3           | 15%      |
|                                      | Through          | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Right            | 14                      | 16            | 2           | 14%      | 15                      | 17            | 2           | 13%      |
|                                      | SB Total         | 26                      | 30            | 4           | 15%      | 35                      | 40            | 5           | 14%      |
| EAST BOUND                           | Left             | 11                      | 12            | 1           | 9%       | 14                      | 16            | 2           | 14%      |
|                                      | Through          | 1,158                   | 1,686         | 528         | 46%      | 2,320                   | 3,507         | 1,187       | 51%      |
|                                      | Right            | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | EB Total         | 1,169                   | 1,698         | 529         | 45%      | 2,334                   | 3,523         | 1,189       | 51%      |
| WEST BOUND                           | Left             | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Through          | 2,491                   | 3,504         | 1,013       | 41%      | 1,893                   | 2,653         | 760         | 40%      |
|                                      | Right            | 26                      | 28            | 2           | 8%       | 13                      | 14            | 1           | 8%       |
|                                      | WB Total         | 2,517                   | 3,532         | 1,015       | 40%      | 1,906                   | 2,667         | 761         | 40%      |
| TOTAL ENTERING VOLUME                |                  | 3,712                   | 5,260         | 1548        | 42%      | 4,275                   | 6,230         | 1955        | 46%      |

| FORECAST PEAK HOUR TO ADT COMPARISON |          |         |        |                |         |         |
|--------------------------------------|----------|---------|--------|----------------|---------|---------|
|                                      |          | VOLUMES |        | PERCENT OF ADT |         | ADT     |
|                                      |          | AM      | PM     | AM             | PM      |         |
| North Leg                            | Inbound  | 30      | 40     |                |         |         |
| North Leg                            | Outbound | 40      | 30     |                |         |         |
| North Leg                            | TOTAL    | 70      | 70     | #DIV/0!        | #DIV/0! | -       |
|                                      |          |         |        |                |         |         |
| South Leg                            | Inbound  | 0       | 0      |                |         |         |
| South Leg                            | Outbound | 0       | 0      |                |         |         |
| South Leg                            | TOTAL    | 0       | 0      | #DIV/0!        | #DIV/0! | -       |
|                                      |          |         |        |                |         |         |
| East Leg                             | Inbound  | 3,532   | 2,667  |                |         |         |
| East Leg                             | Outbound | 1,700   | 3,530  |                |         |         |
| East Leg                             | TOTAL    | 5,232   | 6,197  | 7%             | 9%      | 70,194  |
|                                      |          |         |        |                |         |         |
| West Leg                             | Inbound  | 1,698   | 3,523  |                |         |         |
| West Leg                             | Outbound | 3,520   | 2,670  |                |         |         |
| West Leg                             | TOTAL    | 5,218   | 6,193  | 7%             | 9%      | 70,194  |
|                                      |          |         |        |                |         |         |
| OVERALL TOTAL                        |          | 10,520  | 12,460 | 7%             | 9%      | 140,388 |

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Project: Sycamore Hills Distribution Center  
Scenario: Horizon Year (2040) Without Project

Job #: 12014  
Analyst: RV  
Date: 5/22/2019

LOCATION: Sycamore Canyon Bl./Meridian Pkwy. & Alessandro Bl.  
FORECAST YEAR: 2040

| INDIVIDUAL TURN VOLUME GROWTH REVIEW |                  |                         |               |             |          |                         |               |             |          |
|--------------------------------------|------------------|-------------------------|---------------|-------------|----------|-------------------------|---------------|-------------|----------|
| APPROACH                             | TURNING MOVEMENT | AM PEAK HOUR INPUT DATA |               |             |          | PM PEAK HOUR INPUT DATA |               |             |          |
|                                      |                  | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE |
| NORTH BOUND                          | Left             | 492                     | 610           | 118         | 24%      | 337                     | 417           | 80          | 24%      |
|                                      | Through          | 626                     | 607           | -19         | -3%      | 263                     | 332           | 69          | 26%      |
|                                      | Right            | 59                      | 47            | -12         | -20%     | 152                     | 124           | -28         | -18%     |
|                                      | NB Total         | 1,177                   | 1,264         | 87          | 7%       | 752                     | 873           | 121         | 16%      |
| SOUTH BOUND                          | Left             | 98                      | 147           | 49          | 50%      | 173                     | 185           | 12          | 7%       |
|                                      | Through          | 70                      | 84            | 14          | 20%      | 605                     | 591           | -14         | -2%      |
|                                      | Right            | 102                     | 238           | 136         | 133%     | 293                     | 474           | 181         | 62%      |
|                                      | SB Total         | 270                     | 469           | 199         | 74%      | 1,071                   | 1,250         | 179         | 17%      |
| EAST BOUND                           | Left             | 130                     | 232           | 102         | 78%      | 132                     | 306           | 174         | 132%     |
|                                      | Through          | 849                     | 1,243         | 394         | 46%      | 1,542                   | 2,315         | 773         | 50%      |
|                                      | Right            | 201                     | 236           | 35          | 17%      | 498                     | 683           | 185         | 37%      |
|                                      | EB Total         | 1,180                   | 1,711         | 531         | 45%      | 2,172                   | 3,304         | 1,132       | 52%      |
| WEST BOUND                           | Left             | 103                     | 75            | -28         | -27%     | 153                     | 129           | -24         | -16%     |
|                                      | Through          | 1,937                   | 2,735         | 798         | 41%      | 1,363                   | 1,907         | 544         | 40%      |
|                                      | Right            | 485                     | 536           | 51          | 11%      | 138                     | 197           | 59          | 43%      |
|                                      | WB Total         | 2,525                   | 3,346         | 821         | 33%      | 1,654                   | 2,233         | 579         | 35%      |
| TOTAL ENTERING VOLUME                |                  | 5,152                   | 6,790         | 1638        | 32%      | 5,649                   | 7,660         | 2011        | 36%      |

| FORECAST PEAK HOUR TO ADT COMPARISON |          |         |        |                |     |         |
|--------------------------------------|----------|---------|--------|----------------|-----|---------|
|                                      |          | VOLUMES |        | PERCENT OF ADT |     | ADT     |
|                                      |          | AM      | PM     | AM             | PM  |         |
| North Leg                            | Inbound  | 469     | 1,250  |                |     |         |
| North Leg                            | Outbound | 1,375   | 835    |                |     |         |
| North Leg                            | TOTAL    | 1,844   | 2,085  | 17%            | 19% | 10,915  |
|                                      |          |         |        |                |     |         |
| South Leg                            | Inbound  | 1,264   | 873    |                |     |         |
| South Leg                            | Outbound | 395     | 1,403  |                |     |         |
| South Leg                            | TOTAL    | 1,659   | 2,276  | 44%            | 61% | 3,753   |
|                                      |          |         |        |                |     |         |
| East Leg                             | Inbound  | 3,346   | 2,233  |                |     |         |
| East Leg                             | Outbound | 1,437   | 2,624  |                |     |         |
| East Leg                             | TOTAL    | 4,783   | 4,857  | 7%             | 7%  | 66,811  |
|                                      |          |         |        |                |     |         |
| West Leg                             | Inbound  | 1,711   | 3,304  |                |     |         |
| West Leg                             | Outbound | 3,583   | 2,798  |                |     |         |
| West Leg                             | TOTAL    | 5,294   | 6,102  | 8%             | 9%  | 69,414  |
|                                      |          |         |        |                |     |         |
| OVERALL TOTAL                        |          | 13,580  | 15,320 | 9%             | 10% | 150,893 |

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Project: Sycamore Hills Distribution Center  
Scenario: Horizon Year (2040) Without Project

Job #: 12014  
Analyst: RV  
Date: 5/22/19

LOCATION: I-215 Southbound Ramps (NS) & Alessandro Bl. (EW)  
FORECAST YEAR: 2040

| INDIVIDUAL TURN VOLUME GROWTH REVIEW |                  |                         |               |             |          |                         |               |             |          |
|--------------------------------------|------------------|-------------------------|---------------|-------------|----------|-------------------------|---------------|-------------|----------|
| APPROACH                             | TURNING MOVEMENT | AM PEAK HOUR INPUT DATA |               |             |          | PM PEAK HOUR INPUT DATA |               |             |          |
|                                      |                  | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE |
| NORTH BOUND                          | Left             | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Through          | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Right            | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | NB Total         | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
| SOUTH BOUND                          | Left             | 1                       | 40            | 39          | 3900%    | 1                       | 81            | 80          | 8000%    |
|                                      | Through          | 0                       | 51            | 51          | #DIV/0!  | 0                       | 109           | 109         | #DIV/0!  |
|                                      | Right            | 1                       | 119           | 118         | 11800%   | 1                       | 133           | 132         | 13200%   |
|                                      | SB Total         | 2                       | 210           | 208         | 10400%   | 2                       | 323           | 321         | 16050%   |
| EAST BOUND                           | Left             | 0                       | 6             | 6           | #DIV/0!  | 0                       | 13            | 13          | #DIV/0!  |
|                                      | Through          | 2                       | 1,540         | 1,538       | 76900%   | 2                       | 2,859         | 2,857       | 142850%  |
|                                      | Right            | 1                       | 215           | 214         | 21400%   | 1                       | 431           | 430         | 43000%   |
|                                      | EB Total         | 3                       | 1,761         | 1,758       | 58600%   | 3                       | 3,303         | 3,300       | 110000%  |
| WEST BOUND                           | Left             | 0                       | 144           | 144         | #DIV/0!  | 0                       | 209           | 209         | #DIV/0!  |
|                                      | Through          | 2                       | 3,041         | 3,039       | 151950%  | 2                       | 2,287         | 2,285       | 114250%  |
|                                      | Right            | 1                       | 4             | 3           | 300%     | 1                       | 7             | 6           | 600%     |
|                                      | WB Total         | 3                       | 3,189         | 3,186       | 106200%  | 3                       | 2,503         | 2,500       | 83333%   |
| TOTAL ENTERING VOLUME                |                  | 8                       | 5,160         | 5152        | 64400%   | 8                       | 6,129         | 6121        | 76513%   |

| FORECAST PEAK HOUR TO ADT COMPARISON |              |               |               |                |
|--------------------------------------|--------------|---------------|---------------|----------------|
|                                      |              | VOLUMES       |               | ADT            |
|                                      |              | AM            | PM            |                |
| North Leg                            | Inbound      | 210           | 323           | 2,836          |
| North Leg                            | Outbound     | 10            | 20            |                |
| <b>North Leg</b>                     | <b>TOTAL</b> | <b>220</b>    | <b>343</b>    |                |
|                                      |              |               |               |                |
| South Leg                            | Inbound      | 0             | 0             | 8,880          |
| South Leg                            | Outbound     | 410           | 749           |                |
| <b>South Leg</b>                     | <b>TOTAL</b> | <b>410</b>    | <b>749</b>    |                |
|                                      |              |               |               |                |
| East Leg                             | Inbound      | 3,189         | 2,503         | 60,278         |
| East Leg                             | Outbound     | 1,580         | 2,940         |                |
| <b>East Leg</b>                      | <b>TOTAL</b> | <b>4,769</b>  | <b>5,443</b>  |                |
|                                      |              |               |               |                |
| West Leg                             | Inbound      | 1,761         | 3,303         | 66,811         |
| West Leg                             | Outbound     | 3,160         | 2,420         |                |
| <b>West Leg</b>                      | <b>TOTAL</b> | <b>4,921</b>  | <b>5,723</b>  |                |
|                                      |              |               |               |                |
| <b>OVERALL TOTAL</b>                 |              | <b>10,320</b> | <b>12,258</b> | <b>138,805</b> |

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Project: Sycamore Hills Distribution Center  
Scenario: Horizon Year (2040) Without Project

Job #: 12014  
Analyst: RV  
Date: 5/22/19

LOCATION: I-215 Northbound Ramps (NS) & Alessandro Bl. (EW)  
FORECAST YEAR: 2040

| INDIVIDUAL TURN VOLUME GROWTH REVIEW |                  |                         |               |             |          |                         |               |             |          |
|--------------------------------------|------------------|-------------------------|---------------|-------------|----------|-------------------------|---------------|-------------|----------|
| APPROACH                             | TURNING MOVEMENT | AM PEAK HOUR INPUT DATA |               |             |          | PM PEAK HOUR INPUT DATA |               |             |          |
|                                      |                  | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE | EXISTING COUNT          | FUTURE VOLUME | DIFF-ERENCE | % CHANGE |
| NORTH BOUND                          | Left             | 1                       | 436           | 435         | 43500%   | 1                       | 226           | 225         | 22500%   |
|                                      | Through          | 0                       | 35            | 35          | #DIV/0!  | 0                       | 68            | 68          | #DIV/0!  |
|                                      | Right            | 1                       | 113           | 112         | 11200%   | 1                       | 177           | 176         | 17600%   |
|                                      | NB Total         | 2                       | 584           | 582         | 29100%   | 2                       | 471           | 469         | 23450%   |
| SOUTH BOUND                          | Left             | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Through          | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | Right            | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | SB Total         | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
| EAST BOUND                           | Left             | 1                       | 51            | 50          | 5000%    | 1                       | 118           | 117         | 11700%   |
|                                      | Through          | 2                       | 1,467         | 1,465       | 73250%   | 2                       | 2,768         | 2,766       | 138300%  |
|                                      | Right            | 0                       | 0             | 0           | #DIV/0!  | 0                       | 0             | 0           | #DIV/0!  |
|                                      | EB Total         | 3                       | 1,518         | 1,515       | 50500%   | 3                       | 2,886         | 2,883       | 96100%   |
| WEST BOUND                           | Left             | 1                       | 0             | -1          | -100%    | 1                       | 0             | -1          | -100%    |
|                                      | Through          | 2                       | 2,714         | 2,712       | 135600%  | 2                       | 2,198         | 2,196       | 109800%  |
|                                      | Right            | 0                       | 24            | 24          | #DIV/0!  | 0                       | 74            | 74          | #DIV/0!  |
|                                      | WB Total         | 3                       | 2,738         | 2,735       | 91167%   | 3                       | 2,272         | 2,269       | 75633%   |
| TOTAL ENTERING VOLUME                |                  | 8                       | 4,840         | 4832        | 60400%   | 8                       | 5,629         | 5621        | 70263%   |

| FORECAST PEAK HOUR TO ADT COMPARISON |              |              |               |                |
|--------------------------------------|--------------|--------------|---------------|----------------|
|                                      |              | VOLUMES      |               | ADT            |
|                                      |              | AM           | PM            |                |
| North Leg                            | Inbound      | 0            | 0             |                |
| North Leg                            | Outbound     | 110          | 260           |                |
| <b>North Leg</b>                     | <b>TOTAL</b> | <b>110</b>   | <b>260</b>    | <b>2,417</b>   |
|                                      |              |              |               |                |
| South Leg                            | Inbound      | 584          | 471           |                |
| South Leg                            | Outbound     | 0            | 0             |                |
| <b>South Leg</b>                     | <b>TOTAL</b> | <b>584</b>   | <b>471</b>    | <b>7,608</b>   |
|                                      |              |              |               |                |
| East Leg                             | Inbound      | 2,738        | 2,272         |                |
| East Leg                             | Outbound     | 1,580        | 2,945         |                |
| <b>East Leg</b>                      | <b>TOTAL</b> | <b>4,318</b> | <b>5,217</b>  | <b>55,015</b>  |
|                                      |              |              |               |                |
| West Leg                             | Inbound      | 1,518        | 2,886         |                |
| West Leg                             | Outbound     | 3,150        | 2,424         |                |
| <b>West Leg</b>                      | <b>TOTAL</b> | <b>4,668</b> | <b>5,310</b>  | <b>60,278</b>  |
|                                      |              |              |               |                |
| <b>OVERALL TOTAL</b>                 |              | <b>9,680</b> | <b>11,258</b> | <b>125,318</b> |

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## **APPENDIX 5.1:**

### **E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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Intersection

Int Delay, s/veh 2

| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 6                                                                                 | 0    | 0                                                                                 | 19   | 0    | 0                                                                                 |
| Future Vol, veh/h        | 6                                                                                 | 0    | 0                                                                                 | 19   | 0    | 0                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92   | 92                                                                                | 92   | 92   | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 7                                                                                 | 0    | 0                                                                                 | 21   | 0    | 0                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 12     | 11     | 0      |
| Stage 1              | 11     | -      | -      |
| Stage 2              | 1      | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 1013   | 1076   | -      |
| Stage 1              | 1017   | -      | -      |
| Stage 2              | 1028   | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 1013   | 1076   | -      |
| Mov Cap-2 Maneuver   | 1013   | -      | -      |
| Stage 1              | 1017   | -      | -      |
| Stage 2              | 1028   | -      | -      |

| Approach             | WB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 8.6 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT  |
|-----------------------|-----|----------|-------|------|
| Capacity (veh/h)      | -   | -        | 1013  | 1608 |
| HCM Lane V/C Ratio    | -   | -        | 0.006 | -    |
| HCM Control Delay (s) | -   | -        | 8.6   | 0    |
| HCM Lane LOS          | -   | -        | A     | A    |
| HCM 95th %tile Q(veh) | -   | -        | 0     | 0    |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/22/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 11                                                                                | 1207                                                                              | 42                                                                                | 2477                                                                              | 18                                                                                | 62                                                                                | 5                                                                                   | 36                                                                                  | 6                                                                                   | 3                                                                                   | 3                                                                                   |
| Future Volume (vph)  | 11                                                                                | 1207                                                                              | 42                                                                                | 2477                                                                              | 18                                                                                | 62                                                                                | 5                                                                                   | 36                                                                                  | 6                                                                                   | 3                                                                                   | 3                                                                                   |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 68.4                                                                              | 11.0                                                                              | 70.2                                                                              | 70.2                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                |
| Total Split (%)      | 7.7%                                                                              | 57.0%                                                                             | 9.2%                                                                              | 58.5%                                                                             | 58.5%                                                                             | 33.8%                                                                             | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

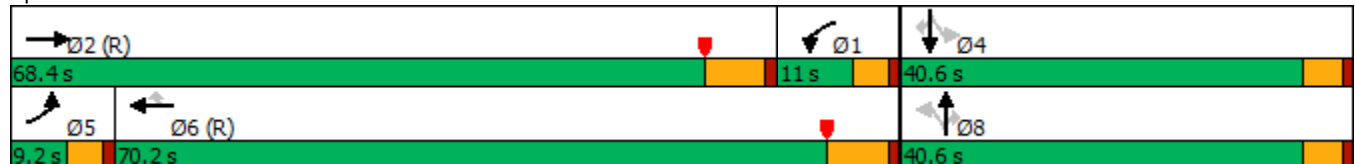
Actuated Cycle Length: 120

Offset: 88 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 11                                                                                | 1207                                                                                                                                                                                                                                                  | 23                                                                                | 42                                                                                | 2477                                                                                                                                                                                                                                                  | 18                                                                                | 62                                                                                 | 5                                                                                   | 36                                                                                  | 6                                                                                   | 3                                                                                   | 3                                                                                   |
| Future Volume (veh/h)        | 11                                                                                | 1207                                                                                                                                                                                                                                                  | 23                                                                                | 42                                                                                | 2477                                                                                                                                                                                                                                                  | 18                                                                                | 62                                                                                 | 5                                                                                   | 36                                                                                  | 6                                                                                   | 3                                                                                   | 3                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.99                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 12                                                                                | 1298                                                                                                                                                                                                                                                  | 25                                                                                | 45                                                                                | 2663                                                                                                                                                                                                                                                  | 19                                                                                | 67                                                                                 | 5                                                                                   | 8                                                                                   | 6                                                                                   | 3                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.93                                                                               | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 25                                                                                | 2702                                                                                                                                                                                                                                                  | 52                                                                                | 68                                                                                | 2898                                                                                                                                                                                                                                                  | 900                                                                               | 473                                                                                | 33                                                                                  | 477                                                                                 | 331                                                                                 | 156                                                                                 | 483                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.52                                                                                                                                                                                                                                                  | 0.52                                                                              | 0.01                                                                              | 0.18                                                                                                                                                                                                                                                  | 0.18                                                                              | 0.30                                                                               | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5239                                                                                                                                                                                                                                                  | 101                                                                               | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 1384                                                                               | 111                                                                                 | 1590                                                                                | 936                                                                                 | 521                                                                                 | 1610                                                                                |
| Grp Volume(v), veh/h         | 12                                                                                | 857                                                                                                                                                                                                                                                   | 466                                                                               | 45                                                                                | 2663                                                                                                                                                                                                                                                  | 19                                                                                | 72                                                                                 | 0                                                                                   | 8                                                                                   | 9                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1882                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1495                                                                               | 0                                                                                   | 1590                                                                                | 1457                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.8                                                                               | 19.1                                                                                                                                                                                                                                                  | 19.1                                                                              | 3.0                                                                               | 60.5                                                                                                                                                                                                                                                  | 1.2                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.8                                                                               | 19.1                                                                                                                                                                                                                                                  | 19.1                                                                              | 3.0                                                                               | 60.5                                                                                                                                                                                                                                                  | 1.2                                                                               | 3.5                                                                                | 0.0                                                                                 | 0.4                                                                                 | 3.5                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.05                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 0.93                                                                               |                                                                                     | 1.00                                                                                | 0.67                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 25                                                                                | 1784                                                                                                                                                                                                                                                  | 971                                                                               | 68                                                                                | 2898                                                                                                                                                                                                                                                  | 900                                                                               | 507                                                                                | 0                                                                                   | 477                                                                                 | 487                                                                                 | 0                                                                                   | 483                                                                                 |
| V/C Ratio(X)                 | 0.48                                                                              | 0.48                                                                                                                                                                                                                                                  | 0.48                                                                              | 0.66                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.02                                                                              | 0.14                                                                               | 0.00                                                                                | 0.02                                                                                | 0.02                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 1784                                                                                                                                                                                                                                                  | 971                                                                               | 103                                                                               | 2898                                                                                                                                                                                                                                                  | 900                                                                               | 507                                                                                | 0                                                                                   | 477                                                                                 | 487                                                                                 | 0                                                                                   | 483                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.81                                                                              | 0.81                                                                                                                                                                                                                                                  | 0.81                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.8                                                                              | 18.7                                                                                                                                                                                                                                                  | 18.7                                                                              | 58.5                                                                              | 46.3                                                                                                                                                                                                                                                  | 22.1                                                                              | 30.6                                                                               | 0.0                                                                                 | 29.5                                                                                | 29.6                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 5.3                                                                               | 0.9                                                                                                                                                                                                                                                   | 1.7                                                                               | 3.3                                                                               | 5.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.1                                                                                 | 0.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.4                                                                               | 7.1                                                                                                                                                                                                                                                   | 8.0                                                                               | 1.4                                                                               | 29.0                                                                                                                                                                                                                                                  | 0.4                                                                               | 1.6                                                                                | 0.0                                                                                 | 0.2                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 64.1                                                                              | 19.6                                                                                                                                                                                                                                                  | 20.4                                                                              | 61.8                                                                              | 51.3                                                                                                                                                                                                                                                  | 22.1                                                                              | 31.2                                                                               | 0.0                                                                                 | 29.6                                                                                | 29.6                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | B                                                                                                                                                                                                                                                     | C                                                                                 | E                                                                                 | D                                                                                                                                                                                                                                                     | C                                                                                 | C                                                                                  | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1335                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 2727                                                                                                                                                                                                                                                  |                                                                                   |                                                                                    |                                                                                     | 80                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 20.3                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 51.2                                                                                                                                                                                                                                                  |                                                                                   |                                                                                    |                                                                                     | 31.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | D                                                                                                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 4                                                                                 | 5                                                                                                                                                                                                                                                     | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              | 68.4                                                                                                                                                                                                                                                  |                                                                                   | 40.6                                                                              | 5.8                                                                                                                                                                                                                                                   | 73.6                                                                              |                                                                                    | 40.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 6.5                                                                               | * 6.5                                                                                                                                                                                                                                                 |                                                                                   | 4.6                                                                               | * 4.2                                                                                                                                                                                                                                                 | 6.5                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.8                                                                               | * 62                                                                                                                                                                                                                                                  |                                                                                   | 36.0                                                                              | * 5                                                                                                                                                                                                                                                   | 63.7                                                                              |                                                                                    | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.0                                                                               | 21.1                                                                                                                                                                                                                                                  |                                                                                   | 5.5                                                                               | 2.8                                                                                                                                                                                                                                                   | 62.5                                                                              |                                                                                    | 5.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 14.9                                                                                                                                                                                                                                                  |                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 1.2                                                                               |                                                                                    | 0.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

HCM 6th Ctrl Delay 40.9

HCM 6th LOS D

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/22/2019

|                      |  |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | Ø6   |
| Lane Configurations  |  |  |  |  |                                                                                   |  |      |
| Traffic Volume (vph) | 5                                                                                 | 1226                                                                              | 2                                                                                 | 2506                                                                              | 3                                                                                 | 0                                                                                 |      |
| Future Volume (vph)  | 5                                                                                 | 1226                                                                              | 2                                                                                 | 2506                                                                              | 3                                                                                 | 0                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                |      |
| Protected Phases     | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |                                                                                   | 2                                                                                 | 6    |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |      |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.2                                                                               | 23.5                                                                              | 9.2                                                                               | 23.5                                                                              | 14.6                                                                              | 14.6                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 95.0                                                                              | 10.0                                                                              | 95.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0 |
| Total Split (%)      | 8.3%                                                                              | 79.2%                                                                             | 8.3%                                                                              | 79.2%                                                                             | 12.5%                                                                             | 12.5%                                                                             | 13%  |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                               |      |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                   |      |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None |

Intersection Summary

Cycle Length: 120

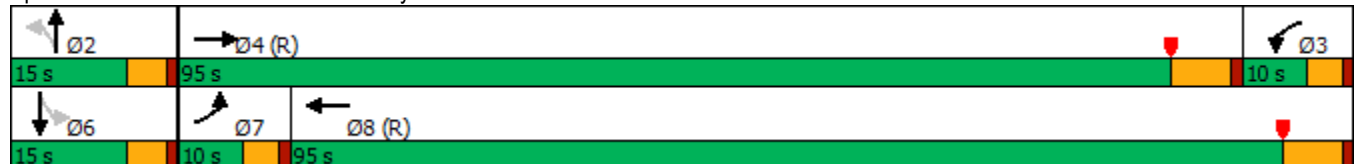
Actuated Cycle Length: 120

Offset: 81 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |                                                                                   |                                                                                    |   |                                                                                     |                                                                                     |   |                                                                                     |
| Traffic Volume (veh/h)       | 5                                                                                 | 1226                                                                                                                                                                                                                                                  | 5                                                                                 | 2                                                                                 | 2506                                                                                                                                                                                                                                                  | 0                                                                                 | 3                                                                                  | 0                                                                                                                                                                       | 3                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1226                                                                                                                                                                                                                                                  | 5                                                                                 | 2                                                                                 | 2506                                                                                                                                                                                                                                                  | 0                                                                                 | 3                                                                                  | 0                                                                                                                                                                       | 3                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                                                                                                         |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1333                                                                                                                                                                                                                                                  | 5                                                                                 | 2                                                                                 | 2724                                                                                                                                                                                                                                                  | 0                                                                                 | 3                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                                                                                                    | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 3934                                                                                                                                                                                                                                                  | 15                                                                                | 195                                                                               | 4451                                                                                                                                                                                                                                                  | 0                                                                                 | 71                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 15                                                                                                                                                                      | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.11                                                                              | 0.86                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.01                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5334                                                                                                                                                                                                                                                  | 20                                                                                | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Grp Volume(v), veh/h         | 5                                                                                 | 864                                                                                                                                                                                                                                                   | 474                                                                               | 2                                                                                 | 2724                                                                                                                                                                                                                                                  | 0                                                                                 | 3                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1896                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Q Serve(g_s), s              | 0.3                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.1                                                                               | 18.8                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.3                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.1                                                                               | 18.8                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.01                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 0.00                                                                                | 0.00                                                                                |                                                                                                                                                                         | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 2550                                                                                                                                                                                                                                                  | 1399                                                                              | 195                                                                               | 4451                                                                                                                                                                                                                                                  | 0                                                                                 | 71                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 15                                                                                                                                                                      | 0                                                                                   |
| V/C Ratio(X)                 | 0.43                                                                              | 0.34                                                                                                                                                                                                                                                  | 0.34                                                                              | 0.01                                                                              | 0.61                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.04                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 87                                                                                | 2550                                                                                                                                                                                                                                                  | 1399                                                                              | 195                                                                               | 4451                                                                                                                                                                                                                                                  | 0                                                                                 | 185                                                                                | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 165                                                                                                                                                                     | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 2.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(I)           | 0.88                                                                              | 0.88                                                                                                                                                                                                                                                  | 0.88                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 59.0                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 47.8                                                                              | 2.5                                                                                                                                                                                                                                                   | 0.0                                                                               | 59.2                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 8.1                                                                               | 0.3                                                                                                                                                                                                                                                   | 0.6                                                                               | 0.0                                                                               | 0.6                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.2                                                                               | 0.1                                                                               | 1.7                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.1                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 67.1                                                                              | 0.3                                                                                                                                                                                                                                                   | 0.6                                                                               | 47.8                                                                              | 3.2                                                                                                                                                                                                                                                   | 0.0                                                                               | 59.4                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                  | A                                                                                                                                                                       | A                                                                                   | A                                                                                   | A                                                                                                                                                                       | A                                                                                   |
| Approach Vol, veh/h          | 1343                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2726                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    | 3                                                                                                                                                                       |                                                                                     |                                                                                     | 0                                                                                                                                                                       |                                                                                     |
| Approach Delay, s/veh        | 0.7                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 3.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    | 59.4                                                                                                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    | E                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 3                                                                                 | 4                                                                                 |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                    | 7                                                                                                                                                                       | 8                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 5.6                                                                               |                                                                                                                                                                                                                                                       | 19.4                                                                              | 95.0                                                                              |                                                                                                                                                                                                                                                       | 5.6                                                                               |                                                                                    | 5.0                                                                                                                                                                     | 109.5                                                                               |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       | 6.5                                                                               | * 6.5                                                                             |                                                                                                                                                                                                                                                       | 4.6                                                                               |                                                                                    | * 4.2                                                                                                                                                                   | 6.5                                                                                 |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                                                                                                                                                                                       | 5.8                                                                               | * 89                                                                              |                                                                                                                                                                                                                                                       | 10.4                                                                              |                                                                                    | * 5.8                                                                                                                                                                   | 88.5                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.2                                                                               |                                                                                                                                                                                                                                                       | 2.1                                                                               | 2.0                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                    | 2.3                                                                                                                                                                     | 20.8                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               | 17.4                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                    | 0.0                                                                                                                                                                     | 56.6                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 2.4                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

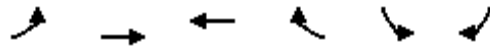
| Intersection               |             |                        |       |        |                            |       |        |      |                                |          |      |      |
|----------------------------|-------------|------------------------|-------|--------|----------------------------|-------|--------|------|--------------------------------|----------|------|------|
| Int Delay, s/veh           | 3.1         |                        |       |        |                            |       |        |      |                                |          |      |      |
| Movement                   | EBL         | EBT                    | EBR   | WBL    | WBT                        | WBR   | NBL    | NBT  | NBR                            | SBL      | SBT  | SBR  |
| Lane Configurations        | ↱ ↑↑↑       |                        |       | ↱ ↑↑↑  |                            |       | ↱      | ↱    |                                | ↱        | ↱    |      |
| Traffic Vol, veh/h         | 4           | 1218                   | 7     | 12     | 2505                       | 35    | 3      | 0    | 14                             | 11       | 0    | 1    |
| Future Vol, veh/h          | 4           | 1218                   | 7     | 12     | 2505                       | 35    | 3      | 0    | 14                             | 11       | 0    | 1    |
| Conflicting Peds, #/hr     | 0           | 0                      | 0     | 0      | 0                          | 0     | 0      | 0    | 0                              | 0        | 0    | 0    |
| Sign Control               | Free        | Free                   | Free  | Free   | Free                       | Free  | Stop   | Stop | Stop                           | Stop     | Stop | Stop |
| RT Channelized             | -           | -                      | None  | -      | -                          | None  | -      | -    | None                           | -        | -    | None |
| Storage Length             | 155         | -                      | -     | 155    | -                          | -     | 0      | -    | -                              | 0        | -    | -    |
| Veh in Median Storage, #   | -           | 0                      | -     | -      | 0                          | -     | -      | 0    | -                              | -        | 0    | -    |
| Grade, %                   | -           | 0                      | -     | -      | 0                          | -     | -      | 0    | -                              | -        | 0    | -    |
| Peak Hour Factor           | 92          | 92                     | 92    | 92     | 92                         | 92    | 92     | 92   | 92                             | 92       | 92   | 92   |
| Heavy Vehicles, %          | 0           | 0                      | 0     | 0      | 0                          | 0     | 0      | 0    | 0                              | 0        | 0    | 0    |
| Mvmt Flow                  | 4           | 1324                   | 8     | 13     | 2723                       | 38    | 3      | 0    | 15                             | 12       | 0    | 1    |
|                            |             |                        |       |        |                            |       |        |      |                                |          |      |      |
| Major/Minor                | Major1      |                        |       | Major2 |                            |       | Minor1 |      |                                | Minor2   |      |      |
| Conflicting Flow All       | 2761        | 0                      | 0     | 1332   | 0                          | 0     | 2451   | 4123 | 666                            | 3306     | 4108 | 1381 |
| Stage 1                    | -           | -                      | -     | -      | -                          | -     | 1336   | 1336 | -                              | 2768     | 2768 | -    |
| Stage 2                    | -           | -                      | -     | -      | -                          | -     | 1115   | 2787 | -                              | 538      | 1340 | -    |
| Critical Hdwy              | 5.3         | -                      | -     | 5.3    | -                          | -     | 6.4    | 6.5  | 7.1                            | 6.4      | 6.5  | 7.1  |
| Critical Hdwy Stg 1        | -           | -                      | -     | -      | -                          | -     | 7.3    | 5.5  | -                              | 7.3      | 5.5  | -    |
| Critical Hdwy Stg 2        | -           | -                      | -     | -      | -                          | -     | 6.7    | 5.5  | -                              | 6.7      | 5.5  | -    |
| Follow-up Hdwy             | 3.1         | -                      | -     | 3.1    | -                          | -     | 3.8    | 4    | 3.9                            | 3.8      | 4    | 3.9  |
| Pot Cap-1 Maneuver         | 52          | -                      | -     | 275    | -                          | -     | 34     | 2    | 348                            | ~10      | 2    | 117  |
| Stage 1                    | -           | -                      | -     | -      | -                          | -     | 118    | 224  | -                              | ~11      | 42   | -    |
| Stage 2                    | -           | -                      | -     | -      | -                          | -     | 202    | 41   | -                              | 456      | 223  | -    |
| Platoon blocked, %         |             | -                      | -     |        | -                          | -     |        |      |                                |          |      |      |
| Mov Cap-1 Maneuver         | 52          | -                      | -     | 275    | -                          | -     | 31     | 2    | 348                            | ~9       | 2    | 117  |
| Mov Cap-2 Maneuver         | -           | -                      | -     | -      | -                          | -     | 31     | 2    | -                              | ~9       | 2    | -    |
| Stage 1                    | -           | -                      | -     | -      | -                          | -     | 109    | 207  | -                              | ~10      | 40   | -    |
| Stage 2                    | -           | -                      | -     | -      | -                          | -     | 191    | 39   | -                              | 403      | 206  | -    |
|                            |             |                        |       |        |                            |       |        |      |                                |          |      |      |
| Approach                   | EB          |                        |       | WB     |                            |       | NB     |      |                                | SB       |      |      |
| HCM Control Delay, s       | 0.3         |                        |       | 0.1    |                            |       | 36.7   |      |                                | \$ 895.4 |      |      |
| HCM LOS                    |             |                        |       |        |                            |       | E      |      |                                | F        |      |      |
|                            |             |                        |       |        |                            |       |        |      |                                |          |      |      |
| Minor Lane/Major Mvmt      | NBLn1 NBLn2 |                        | EBL   | EBT    | EBR                        | WBL   | WBT    | WBR  | SBLn1                          | SBLn2    |      |      |
| Capacity (veh/h)           | 31 348      |                        | 52    | -      | -                          | 275   | -      | -    | 9                              | 117      |      |      |
| HCM Lane V/C Ratio         | 0.105 0.044 |                        | 0.084 | -      | -                          | 0.047 | -      | -    | 1.329                          | 0.009    |      |      |
| HCM Control Delay (s)      | 134.3 15.8  |                        | 80.5  | -      | -                          | 18.7  | -      | -    | \$ 973.5                       | 36.1     |      |      |
| HCM Lane LOS               | F C         |                        | F     | -      | -                          | C     | -      | -    | F                              | E        |      |      |
| HCM 95th %tile Q(veh)      | 0.3 0.1     |                        | 0.3   | -      | -                          | 0.1   | -      | -    | 2.3                            | 0        |      |      |
| Notes                      |             |                        |       |        |                            |       |        |      |                                |          |      |      |
| ~: Volume exceeds capacity |             | \$: Delay exceeds 300s |       |        | +: Computation Not Defined |       |        |      | *: All major volume in platoon |          |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/22/2019



| Lane Group           | EBL   | EBT   | WBT   | WBR   | SBL   | SBR  |
|----------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations  | ↰     | ↑↑↑   | ↑↑↑   | ↰     | ↰     | ↰    |
| Traffic Volume (vph) | 11    | 1255  | 2694  | 35    | 20    | 14   |
| Future Volume (vph)  | 11    | 1255  | 2694  | 35    | 20    | 14   |
| Turn Type            | Prot  | NA    | NA    | Perm  | Prot  | Free |
| Protected Phases     | 7     | 4     | 8     |       | 6     |      |
| Permitted Phases     |       |       |       | 8     |       | Free |
| Detector Phase       | 7     | 4     | 8     | 8     | 6     |      |
| Switch Phase         |       |       |       |       |       |      |
| Minimum Initial (s)  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |      |
| Minimum Split (s)    | 9.2   | 28.5  | 30.5  | 30.5  | 26.6  |      |
| Total Split (s)      | 14.0  | 94.0  | 80.0  | 80.0  | 26.0  |      |
| Total Split (%)      | 11.7% | 78.3% | 66.7% | 66.7% | 21.7% |      |
| Yellow Time (s)      | 3.2   | 5.5   | 5.5   | 5.5   | 3.6   |      |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |      |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.2   | 6.5   | 6.5   | 6.5   | 4.6   |      |
| Lead/Lag             | Lag   |       | Lead  | Lead  |       |      |
| Lead-Lag Optimize?   | Yes   |       | Yes   | Yes   |       |      |
| Recall Mode          | None  | None  | None  | None  | C-Max |      |

### Intersection Summary

Cycle Length: 120

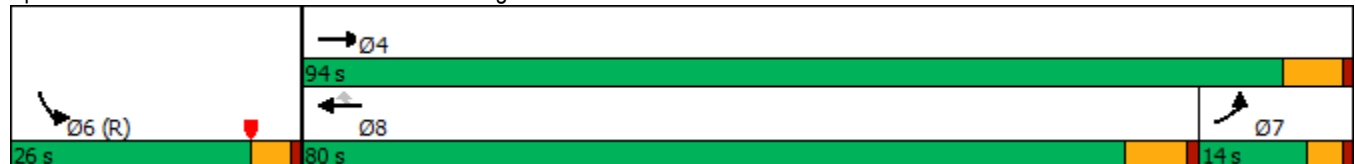
Actuated Cycle Length: 120

Offset: 50.5 (42%), Referenced to phase 2: and 6:SBL, Start of Yellow

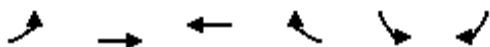
Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 5: Alessandro Bl. & San Gorgonio Dr. 05/22/2019



| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR      |
|------------------------------|------|------|------|------|------|----------|
| Lane Configurations          |      |      |      |      |      |          |
| Traffic Volume (veh/h)       | 11   | 1255 | 2694 | 35   | 20   | 14       |
| Future Volume (veh/h)        | 11   | 1255 | 2694 | 35   | 20   | 14       |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0        |
| Ped-Bike Adj(A_pbT)          | 1.00 |      |      | 1.00 | 1.00 | 1.00     |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00     |
| Work Zone On Approach        |      | No   | No   |      | No   |          |
| Adj Sat Flow, veh/h/ln       | 1900 | 1900 | 1900 | 1900 | 1900 | 1900     |
| Adj Flow Rate, veh/h         | 12   | 1364 | 2928 | 35   | 22   | 0        |
| Peak Hour Factor             | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92     |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 0    | 0    | 0        |
| Cap, veh/h                   | 25   | 3500 | 3147 | 976  | 817  |          |
| Arrive On Green              | 0.01 | 0.67 | 0.81 | 0.81 | 0.23 | 0.00     |
| Sat Flow, veh/h              | 1810 | 5358 | 5358 | 1609 | 3510 | 1610     |
| Grp Volume(v), veh/h         | 12   | 1364 | 2928 | 35   | 22   | 0        |
| Grp Sat Flow(s),veh/h/ln     | 1810 | 1729 | 1729 | 1609 | 1755 | 1610     |
| Q Serve(g_s), s              | 0.8  | 13.9 | 52.4 | 0.5  | 0.6  | 0.0      |
| Cycle Q Clear(g_c), s        | 0.8  | 13.9 | 52.4 | 0.5  | 0.6  | 0.0      |
| Prop In Lane                 | 1.00 |      |      | 1.00 | 1.00 | 1.00     |
| Lane Grp Cap(c), veh/h       | 25   | 3500 | 3147 | 976  | 817  |          |
| V/C Ratio(X)                 | 0.48 | 0.39 | 0.93 | 0.04 | 0.03 |          |
| Avail Cap(c_a), veh/h        | 148  | 3782 | 3177 | 985  | 817  |          |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.33 | 1.33 | 1.00 | 1.00     |
| Upstream Filter(I)           | 1.00 | 1.00 | 0.09 | 0.09 | 1.00 | 0.00     |
| Uniform Delay (d), s/veh     | 58.8 | 8.6  | 9.6  | 4.6  | 35.5 | 0.0      |
| Incr Delay (d2), s/veh       | 5.3  | 0.1  | 0.6  | 0.0  | 0.1  | 0.0      |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0      |
| %ile BackOfQ(50%),veh/ln     | 0.4  | 4.3  | 6.2  | 0.2  | 0.3  | 0.0      |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |          |
| LnGrp Delay(d),s/veh         | 64.1 | 8.7  | 10.2 | 4.6  | 35.6 | 0.0      |
| LnGrp LOS                    | E    | A    | B    | A    | D    |          |
| Approach Vol, veh/h          |      | 1376 | 2963 |      | 22   | A        |
| Approach Delay, s/veh        |      | 9.2  | 10.1 |      | 35.6 |          |
| Approach LOS                 |      | A    | B    |      | D    |          |
| Timer - Assigned Phs         |      |      | 4    |      | 6    | 7 8      |
| Phs Duration (G+Y+Rc), s     |      |      | 87.5 |      | 32.5 | 8.1 79.3 |
| Change Period (Y+Rc), s      |      |      | 6.5  |      | 4.6  | 6.5 *6.5 |
| Max Green Setting (Gmax), s  |      |      | 87.5 |      | 21.4 | 9.8 *74  |
| Max Q Clear Time (g_c+I1), s |      |      | 15.9 |      | 2.6  | 2.8 54.4 |
| Green Ext Time (p_c), s      |      |      | 19.1 |      | 0.0  | 0.0 18.4 |
| <b>Intersection Summary</b>  |      |      |      |      |      |          |
| HCM 6th Ctrl Delay           |      |      | 10.0 |      |      |          |
| HCM 6th LOS                  |      |      | A    |      |      |          |
| <b>Notes</b>                 |      |      |      |      |      |          |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/23/2019

|                      |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |   |                                                                                       |                                                                                      |                                                                                      |                                                                                      |                                                                                      |  |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                                | NBL                                                                                                                                                                     | NBT                                                                                                                                                                     | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations  |  |    |  |   |    |  |   |   |   |   |   |  |
| Traffic Volume (vph) | 142                                                                               | 918                                                                                                                                                                                                                                                   | 208                                                                               | 110                                                                                                                                                                 | 2048                                                                                                                                                                                                                                                  | 522                                                                                | 523                                                                                                                                                                     | 678                                                                                                                                                                     | 67                                                                                                                                                                      | 122                                                                                                                                                                     | 83                                                                                                                                                                      | 115                                                                                 |
| Future Volume (vph)  | 142                                                                               | 918                                                                                                                                                                                                                                                   | 208                                                                               | 110                                                                                                                                                                 | 2048                                                                                                                                                                                                                                                  | 522                                                                                | 523                                                                                                                                                                     | 678                                                                                                                                                                     | 67                                                                                                                                                                      | 122                                                                                                                                                                     | 83                                                                                                                                                                      | 115                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                                                                                                                | NA                                                                                                                                                                                                                                                    | Perm                                                                               | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | pm+ov                                                                                                                                                                   | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     |                                                                                    | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       | 2                                                                                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                       | 6                                                                                  |                                                                                                                                                                         |                                                                                                                                                                         | 8                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 2                                                                                 | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     | 6                                                                                  | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                              | 5.0                                                                                                                                                                 | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                               | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 5.0                                                                                                                                                                     | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                              | 8.7                                                                                                                                                                 | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                               | 8.7                                                                                                                                                                     | 15.8                                                                                                                                                                    | 8.7                                                                                                                                                                     | 8.7                                                                                                                                                                     | 49.8                                                                                                                                                                    | 49.8                                                                                |
| Total Split (s)      | 9.5                                                                               | 44.4                                                                                                                                                                                                                                                  | 44.4                                                                              | 11.0                                                                                                                                                                | 45.9                                                                                                                                                                                                                                                  | 45.9                                                                               | 14.8                                                                                                                                                                    | 49.6                                                                                                                                                                    | 11.0                                                                                                                                                                    | 15.0                                                                                                                                                                    | 49.8                                                                                                                                                                    | 49.8                                                                                |
| Total Split (%)      | 7.9%                                                                              | 37.0%                                                                                                                                                                                                                                                 | 37.0%                                                                             | 9.2%                                                                                                                                                                | 38.3%                                                                                                                                                                                                                                                 | 38.3%                                                                              | 12.3%                                                                                                                                                                   | 41.3%                                                                                                                                                                   | 9.2%                                                                                                                                                                    | 12.5%                                                                                                                                                                   | 41.5%                                                                                                                                                                   | 41.5%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 3.2                                                                                                                                                                 | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 3.2                                                                                                                                                                     | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 0.5                                                                                                                                                                 | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 0.5                                                                                                                                                                     | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                 | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                                | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 3.7                                                                                                                                                                     | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                                                                                                                                                                                                   | Lag                                                                               | Lead                                                                                                                                                                | Lag                                                                                                                                                                                                                                                   | Lag                                                                                | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lead                                                                                                                                                                    | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                                                                                                                                                                                                   | Yes                                                                               | Yes                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                   | Yes                                                                                | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | None                                                                                                                                                                | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                              | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø3                                                                                  | Ø4                                                                                  |
| 11 s                                                                                | 44.4 s                                                                              | 14.8 s                                                                              | 49.8 s                                                                              |
|  |  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              | Ø7                                                                                  | Ø8                                                                                  |
| 9.5 s                                                                               | 45.9 s                                                                              | 15 s                                                                                | 49.6 s                                                                              |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |  |    |  |  |  |  |  |
| Traffic Volume (veh/h)       | 142                                                                               | 918                                                                               | 208                                                                               | 110                                                                               | 2048                                                                              | 522                                                                               | 523                                                                                 | 678                                                                                 | 67                                                                                  | 122                                                                                 | 83                                                                                  | 115                                                                                 |
| Future Volume (veh/h)        | 142                                                                               | 918                                                                               | 208                                                                               | 110                                                                               | 2048                                                                              | 522                                                                               | 523                                                                                 | 678                                                                                 | 67                                                                                  | 122                                                                                 | 83                                                                                  | 115                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 149                                                                               | 966                                                                               | 219                                                                               | 116                                                                               | 2156                                                                              | 549                                                                               | 551                                                                                 | 714                                                                                 | 71                                                                                  | 128                                                                                 | 87                                                                                  | 121                                                                                 |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 87                                                                                | 2558                                                                              | 794                                                                               | 170                                                                               | 2558                                                                              | 794                                                                               | 325                                                                                 | 873                                                                                 | 822                                                                                 | 184                                                                                 | 728                                                                                 | 325                                                                                 |
| Arrive On Green              | 0.06                                                                              | 0.66                                                                              | 0.66                                                                              | 0.05                                                                              | 0.49                                                                              | 0.49                                                                              | 0.09                                                                                | 0.24                                                                                | 0.24                                                                                | 0.05                                                                                | 0.20                                                                                | 0.20                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                              | 1610                                                                              | 3510                                                                              | 5187                                                                              | 1609                                                                              | 3510                                                                                | 3610                                                                                | 2834                                                                                | 3510                                                                                | 3610                                                                                | 1610                                                                                |
| Grp Volume(v), veh/h         | 149                                                                               | 966                                                                               | 219                                                                               | 116                                                                               | 2156                                                                              | 549                                                                               | 551                                                                                 | 714                                                                                 | 71                                                                                  | 128                                                                                 | 87                                                                                  | 121                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1610                                                                              | 1755                                                                              | 1729                                                                              | 1609                                                                              | 1755                                                                                | 1805                                                                                | 1417                                                                                | 1755                                                                                | 1805                                                                                | 1610                                                                                |
| Q Serve(g_s), s              | 5.8                                                                               | 10.2                                                                              | 6.9                                                                               | 3.9                                                                               | 43.3                                                                              | 31.5                                                                              | 11.1                                                                                | 22.4                                                                                | 2.2                                                                                 | 4.3                                                                                 | 2.4                                                                                 | 7.8                                                                                 |
| Cycle Q Clear(g_c), s        | 5.8                                                                               | 10.2                                                                              | 6.9                                                                               | 3.9                                                                               | 43.3                                                                              | 31.5                                                                              | 11.1                                                                                | 22.4                                                                                | 2.2                                                                                 | 4.3                                                                                 | 2.4                                                                                 | 7.8                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 87                                                                                | 2558                                                                              | 794                                                                               | 170                                                                               | 2558                                                                              | 794                                                                               | 325                                                                                 | 873                                                                                 | 822                                                                                 | 184                                                                                 | 728                                                                                 | 325                                                                                 |
| V/C Ratio(X)                 | 1.70                                                                              | 0.38                                                                              | 0.28                                                                              | 0.68                                                                              | 0.84                                                                              | 0.69                                                                              | 1.70                                                                                | 0.82                                                                                | 0.09                                                                                | 0.70                                                                                | 0.12                                                                                | 0.37                                                                                |
| Avail Cap(c_a), veh/h        | 87                                                                                | 2558                                                                              | 794                                                                               | 214                                                                               | 2558                                                                              | 794                                                                               | 325                                                                                 | 1318                                                                                | 1171                                                                                | 331                                                                                 | 1324                                                                                | 590                                                                                 |
| HCM Platoon Ratio            | 1.33                                                                              | 1.33                                                                              | 1.33                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 56.1                                                                              | 12.2                                                                              | 11.6                                                                              | 56.2                                                                              | 26.4                                                                              | 23.4                                                                              | 54.5                                                                                | 43.0                                                                                | 31.0                                                                                | 55.9                                                                                | 39.2                                                                                | 41.3                                                                                |
| Incr Delay (d2), s/veh       | 357.3                                                                             | 0.4                                                                               | 0.8                                                                               | 3.6                                                                               | 3.6                                                                               | 4.9                                                                               | 326.5                                                                               | 2.5                                                                                 | 0.0                                                                                 | 1.8                                                                                 | 0.1                                                                                 | 0.7                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 11.2                                                                              | 3.4                                                                               | 2.4                                                                               | 1.8                                                                               | 17.3                                                                              | 12.2                                                                              | 19.5                                                                                | 10.0                                                                                | 0.7                                                                                 | 1.9                                                                                 | 1.0                                                                                 | 3.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 413.4                                                                             | 12.6                                                                              | 12.4                                                                              | 59.8                                                                              | 30.0                                                                              | 28.3                                                                              | 381.0                                                                               | 45.5                                                                                | 31.1                                                                                | 57.7                                                                                | 39.2                                                                                | 42.0                                                                                |
| LnGrp LOS                    | F                                                                                 | B                                                                                 | B                                                                                 | E                                                                                 | C                                                                                 | C                                                                                 | F                                                                                   | D                                                                                   | C                                                                                   | E                                                                                   | D                                                                                   | D                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 1334                                                                              |                                                                                   |                                                                                   | 2821                                                                              |                                                                                   |                                                                                     | 1336                                                                                |                                                                                     |                                                                                     | 336                                                                                 |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 57.3                                                                              |                                                                                   |                                                                                   | 30.9                                                                              |                                                                                   |                                                                                     | 183.1                                                                               |                                                                                     |                                                                                     | 47.3                                                                                |                                                                                     |
| Approach LOS                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                     | F                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 9.5                                                                               | 65.7                                                                              | 14.8                                                                              | 30.0                                                                              | 9.5                                                                               | 65.7                                                                              | 10.0                                                                                | 34.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                               | 3.7                                                                               | 5.8                                                                               | 3.7                                                                               | 6.5                                                                               | 3.7                                                                                 | 5.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 7.3                                                                               | 37.9                                                                              | 11.1                                                                              | 44.0                                                                              | 5.8                                                                               | 39.4                                                                              | 11.3                                                                                | 43.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.9                                                                               | 12.2                                                                              | 13.1                                                                              | 9.8                                                                               | 7.8                                                                               | 45.3                                                                              | 6.3                                                                                 | 24.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 10.8                                                                              | 0.0                                                                               | 0.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 72.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↱     | ↱     |
| Traffic Volume (vph) | 720   | 2436  | 210   | 0     | 337   |
| Future Volume (vph)  | 720   | 2436  | 210   | 0     | 337   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 63.0  | 63.0  | 22.0  | 22.0  | 22.0  |
| Total Split (%)      | 74.1% | 74.1% | 25.9% | 25.9% | 25.9% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

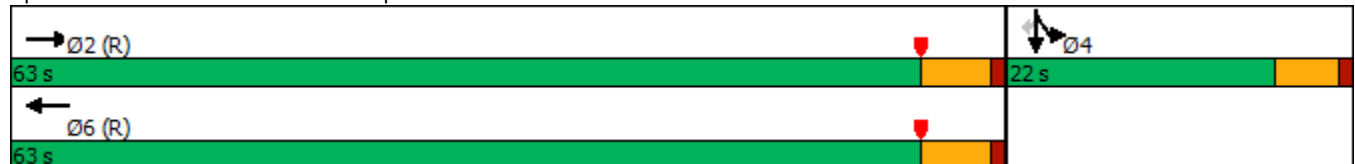
Actuated Cycle Length: 85

Offset: 9 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 55

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/22/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     | ↱                                                                                   | ↕                                                                                   | ↗                                                                                   |
| Traffic Volume (veh/h)       | 0                                                                                 | 720                                                                               | 330                                                                               | 0                                                                                 | 2436                                                                              | 200                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 210                                                                                 | 0                                                                                   | 337                                                                                 |
| Future Volume (veh/h)        | 0                                                                                 | 720                                                                               | 330                                                                               | 0                                                                                 | 2436                                                                              | 200                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 210                                                                                 | 0                                                                                   | 337                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              |                                                                                    |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 0                                                                                 | 742                                                                               | 311                                                                               | 0                                                                                 | 2511                                                                              | 206                                                                               |                                                                                    |                                                                                     |                                                                                     | 324                                                                                 | 0                                                                                   | 187                                                                                 |
| Peak Hour Factor             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 0                                                                                 | 2608                                                                              | 1080                                                                              | 0                                                                                 | 3566                                                                              | 286                                                                               |                                                                                    |                                                                                     |                                                                                     | 531                                                                                 | 0                                                                                   | 236                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.73                                                                              | 0.73                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.15                                                                                | 0.00                                                                                | 0.15                                                                                |
| Sat Flow, veh/h              | 0                                                                                 | 3744                                                                              | 1480                                                                              | 0                                                                                 | 5056                                                                              | 392                                                                               |                                                                                    |                                                                                     |                                                                                     | 3619                                                                                | 0                                                                                   | 1607                                                                                |
| Grp Volume(v), veh/h         | 0                                                                                 | 718                                                                               | 335                                                                               | 0                                                                                 | 1761                                                                              | 956                                                                               |                                                                                    |                                                                                     |                                                                                     | 324                                                                                 | 0                                                                                   | 187                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 0                                                                                 | 1729                                                                              | 1595                                                                              | 0                                                                                 | 1729                                                                              | 1819                                                                              |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 1607                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 6.0                                                                               | 6.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 7.1                                                                                 | 0.0                                                                                 | 9.6                                                                                 |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 6.0                                                                               | 6.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 7.1                                                                                 | 0.0                                                                                 | 9.6                                                                                 |
| Prop In Lane                 | 0.00                                                                              |                                                                                   | 0.93                                                                              | 0.00                                                                              |                                                                                   | 0.22                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 0                                                                                 | 2524                                                                              | 1164                                                                              | 0                                                                                 | 2524                                                                              | 1328                                                                              |                                                                                    |                                                                                     |                                                                                     | 531                                                                                 | 0                                                                                   | 236                                                                                 |
| V/C Ratio(X)                 | 0.00                                                                              | 0.28                                                                              | 0.29                                                                              | 0.00                                                                              | 0.70                                                                              | 0.72                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.61                                                                                | 0.00                                                                                | 0.79                                                                                |
| Avail Cap(c_a), veh/h        | 0                                                                                 | 2524                                                                              | 1164                                                                              | 0                                                                                 | 2524                                                                              | 1328                                                                              |                                                                                    |                                                                                     |                                                                                     | 724                                                                                 | 0                                                                                   | 321                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                              | 2.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.57                                                                              | 0.57                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 3.9                                                                               | 3.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 34.0                                                                                | 0.0                                                                                 | 35.0                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.3                                                                               | 0.6                                                                               | 0.0                                                                               | 0.9                                                                               | 2.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 1.1                                                                                 | 0.0                                                                                 | 9.2                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 1.2                                                                               | 1.2                                                                               | 0.0                                                                               | 0.3                                                                               | 0.7                                                                               |                                                                                    |                                                                                     |                                                                                     | 3.0                                                                                 | 0.0                                                                                 | 4.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 4.2                                                                               | 4.6                                                                               | 0.0                                                                               | 0.9                                                                               | 2.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 35.1                                                                                | 0.0                                                                                 | 44.2                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 1053                                                                              |                                                                                   |                                                                                   | 2717                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | 511                                                                                 |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 4.3                                                                               |                                                                                   |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | 38.5                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 67.5                                                                              |                                                                                   |                                                                                   | 17.5                                                                              |                                                                                   |                                                                                   | 67.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 57.5                                                                              |                                                                                   |                                                                                   | 17.0                                                                              |                                                                                   |                                                                                   | 57.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 8.1                                                                               |                                                                                   |                                                                                   | 11.6                                                                              |                                                                                   |                                                                                   | 2.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 7.5                                                                               |                                                                                   |                                                                                   | 0.9                                                                               |                                                                                   |                                                                                   | 36.6                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   |                                                                                   | 6.5                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBL   | EBT   | WBT   | WBR   | NBL   | NBT   | NBR   |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations  |       |       |       |       |       |       |       |
| Traffic Volume (vph) | 71    | 892   | 1586  | 140   | 954   | 0     | 218   |
| Future Volume (vph)  | 71    | 892   | 1586  | 140   | 954   | 0     | 218   |
| Turn Type            | Prot  | NA    | NA    | Perm  | Split | NA    | Perm  |
| Protected Phases     | 5     | 2     | 6     |       | 8     | 8     |       |
| Permitted Phases     |       |       |       | 6     |       |       | 8     |
| Detector Phase       | 5     | 2     | 6     | 6     | 8     | 8     | 8     |
| Switch Phase         |       |       |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 9.5   | 10.5  | 33.5  | 33.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 10.0  | 49.0  | 39.0  | 39.0  | 36.0  | 36.0  | 36.0  |
| Total Split (%)      | 11.8% | 57.6% | 45.9% | 45.9% | 42.4% | 42.4% | 42.4% |
| Yellow Time (s)      | 3.5   | 4.5   | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.5   | 5.5   | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             | Lag   |       | Lead  | Lead  |       |       |       |
| Lead-Lag Optimize?   | Yes   |       | Yes   | Yes   |       |       |       |
| Recall Mode          | None  | C-Max | C-Max | C-Max | Max   | Max   | Max   |

### Intersection Summary

Cycle Length: 85

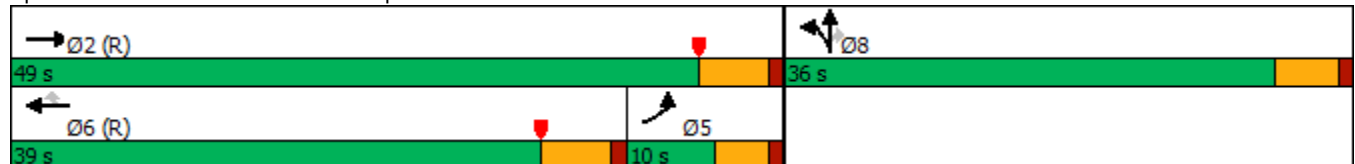
Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                                                                                                    |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)                                                                             | 71                                                                                | 892                                                                                                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 1586                                                                                                                                                                                                                                                  | 140                                                                               | 954                                                                                 | 0                                                                                                                                                                       | 218                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)                                                                              | 71                                                                                | 892                                                                                                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 1586                                                                                                                                                                                                                                                  | 140                                                                               | 954                                                                                 | 0                                                                                                                                                                       | 218                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach                                                                              | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h                                                                               | 72                                                                                | 910                                                                                                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 1618                                                                                                                                                                                                                                                  | 123                                                                               | 1023                                                                                | 0                                                                                                                                                                       | 107                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor                                                                                   | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                                | 0.98                                                                                                                                                                    | 0.98                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                                                                                         | 96                                                                                | 2655                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green                                                                                    | 0.11                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.39                                                                                                                                                                                                                                                  | 0.39                                                                              | 0.36                                                                                | 0.00                                                                                                                                                                    | 0.36                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h                                                                                    | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1573                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h                                                                               | 72                                                                                | 910                                                                                                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 1618                                                                                                                                                                                                                                                  | 123                                                                               | 1023                                                                                | 0                                                                                                                                                                       | 107                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                                                           | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1573                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                                                    | 3.3                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 23.3                                                                                                                                                                                                                                                  | 4.4                                                                               | 21.3                                                                                | 0.0                                                                                                                                                                     | 3.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                                              | 3.3                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 23.3                                                                                                                                                                                                                                                  | 4.4                                                                               | 21.3                                                                                | 0.0                                                                                                                                                                     | 3.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                                                       | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                                                             | 96                                                                                | 2655                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                                                       | 0.75                                                                              | 0.34                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.79                                                                                                                                                                                                                                                  | 0.20                                                                              | 0.78                                                                                | 0.00                                                                                                                                                                    | 0.18                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                                              | 117                                                                               | 2655                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                                                  | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)                                                                                 | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                                                           | 37.5                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 22.7                                                                                                                                                                                                                                                  | 16.9                                                                              | 23.9                                                                                | 0.0                                                                                                                                                                     | 18.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                                                             | 16.5                                                                              | 0.3                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 3.2                                                                                                                                                                                                                                                   | 0.7                                                                               | 4.5                                                                                 | 0.0                                                                                                                                                                     | 0.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                                                           | 1.7                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 8.7                                                                                                                                                                                                                                                   | 1.5                                                                               | 9.0                                                                                 | 0.0                                                                                                                                                                     | 1.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 53.9                                                                              | 0.3                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 25.9                                                                                                                                                                                                                                                  | 17.6                                                                              | 28.4                                                                                | 0.0                                                                                                                                                                     | 19.1                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                                                          | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | B                                                                                 | C                                                                                   | A                                                                                                                                                                       | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                                                | 982                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 1741                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1130                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                              | 4.3                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 25.3                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 27.5                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                       | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                               | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           | 49.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 10.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 39.0                                                                                |                                                                                                                                                                         |                                                                                     | 36.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 5.5                                                                               |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        | 43.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 34                                                                                |                                                                                                                                                                         |                                                                                     | 31.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       | 2.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.3                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 25.3                                                                                |                                                                                                                                                                         |                                                                                     | 23.3                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            | 6.3                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.8                                                                                 |                                                                                                                                                                         |                                                                                     | 2.9                                                                                 |                                                                                     |                                                                                     |
| Intersection Summary                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 20.6                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved volume balancing among the lanes for turning movement.                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection             |                                                                                   |          |                                                                                   |        |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 5.7                                                                               |          |                                                                                   |        |      |                                                                                   |
| Movement                 | WBL                                                                               | WBR      | NBT                                                                               | NBR    | SBL  | SBT                                                                               |
| Lane Configurations      |  |          |  |        |      |  |
| Traffic Vol, veh/h       | 20                                                                                | 0        | 0                                                                                 | 9      | 0    | 0                                                                                 |
| Future Vol, veh/h        | 20                                                                                | 0        | 0                                                                                 | 9      | 0    | 0                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0        | 0                                                                                 | 0      | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop     | Free                                                                              | Free   | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None     | -                                                                                 | None   | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -        | -                                                                                 | -      | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -        | 0                                                                                 | -      | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -        | 0                                                                                 | -      | -    | 0                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92       | 92                                                                                | 92     | 92   | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0        | 0                                                                                 | 0      | 0    | 0                                                                                 |
| Mvmt Flow                | 22                                                                                | 0        | 0                                                                                 | 10     | 0    | 0                                                                                 |
| Major/Minor              | Minor1                                                                            | Major1   |                                                                                   | Major2 |      |                                                                                   |
| Conflicting Flow All     | 6                                                                                 | 5        | 0                                                                                 | 0      | 10   | 0                                                                                 |
| Stage 1                  | 5                                                                                 | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | 1                                                                                 | -        | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy            | 6.4                                                                               | 6.2      | -                                                                                 | -      | 4.1  | -                                                                                 |
| Critical Hdwy Stg 1      | 5.4                                                                               | -        | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy Stg 2      | 5.4                                                                               | -        | -                                                                                 | -      | -    | -                                                                                 |
| Follow-up Hdwy           | 3.5                                                                               | 3.3      | -                                                                                 | -      | 2.2  | -                                                                                 |
| Pot Cap-1 Maneuver       | 1021                                                                              | 1084     | -                                                                                 | -      | 1623 | -                                                                                 |
| Stage 1                  | 1023                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | 1028                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Platoon blocked, %       |                                                                                   |          | -                                                                                 | -      |      | -                                                                                 |
| Mov Cap-1 Maneuver       | 1021                                                                              | 1084     | -                                                                                 | -      | 1623 | -                                                                                 |
| Mov Cap-2 Maneuver       | 1021                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 1                  | 1023                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | 1028                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Approach                 | WB                                                                                | NB       |                                                                                   | SB     |      |                                                                                   |
| HCM Control Delay, s     | 8.6                                                                               | 0        |                                                                                   | 0      |      |                                                                                   |
| HCM LOS                  | A                                                                                 |          |                                                                                   |        |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBT                                                                               | NBRWBLn1 |                                                                                   | SBL    | SBT  |                                                                                   |
| Capacity (veh/h)         | -                                                                                 | - 1021   |                                                                                   | 1623   | -    |                                                                                   |
| HCM Lane V/C Ratio       | -                                                                                 | - 0.021  |                                                                                   | -      | -    |                                                                                   |
| HCM Control Delay (s)    | -                                                                                 | - 8.6    |                                                                                   | 0      | -    |                                                                                   |
| HCM Lane LOS             | -                                                                                 | - A      |                                                                                   | A      | -    |                                                                                   |
| HCM 95th %tile Q(veh)    | -                                                                                 | - 0.1    |                                                                                   | 0      | -    |                                                                                   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/22/2019

|                      |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 7                                                                                 | 2289                                                                              | 46                                                                                | 1819                                                                              | 9                                                                                 | 55                                                                                | 5                                                                                  | 28                                                                                  | 26                                                                                  | 5                                                                                   | 14                                                                                  |
| Future Volume (vph)  | 7                                                                                 | 2289                                                                              | 46                                                                                | 1819                                                                              | 9                                                                                 | 55                                                                                | 5                                                                                  | 28                                                                                  | 26                                                                                  | 5                                                                                   | 14                                                                                  |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                 | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                  |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                    | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                  | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                               | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 40.6                                                                              | 40.6                                                                               | 40.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 68.4                                                                              | 11.0                                                                              | 70.2                                                                              | 70.2                                                                              | 40.6                                                                              | 40.6                                                                               | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                |
| Total Split (%)      | 7.7%                                                                              | 57.0%                                                                             | 9.2%                                                                              | 58.5%                                                                             | 58.5%                                                                             | 33.8%                                                                             | 33.8%                                                                              | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

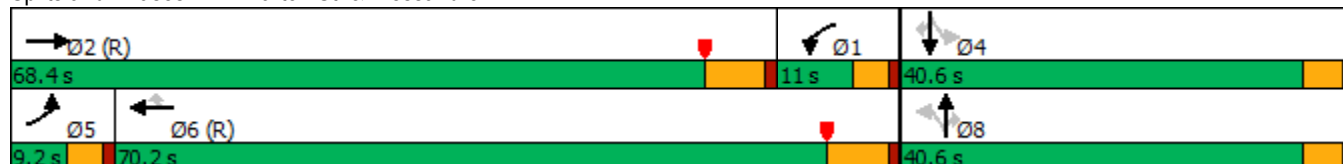
Actuated Cycle Length: 120

Offset: 71 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 2: Barton St. & Alessandro Bl. 05/22/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 7                                                                                 | 2289                                                                              | 41                                                                                | 46                                                                                | 1819                                                                              | 9                                                                                 | 55                                                                                 | 5                                                                                   | 28                                                                                  | 26                                                                                  | 5                                                                                   | 14                                                                                  |
| Future Volume (veh/h)        | 7                                                                                 | 2289                                                                              | 41                                                                                | 46                                                                                | 1819                                                                              | 9                                                                                 | 55                                                                                 | 5                                                                                   | 28                                                                                  | 26                                                                                  | 5                                                                                   | 14                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 0.99                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 7                                                                                 | 2409                                                                              | 41                                                                                | 48                                                                                | 1915                                                                              | 9                                                                                 | 58                                                                                 | 5                                                                                   | 7                                                                                   | 27                                                                                  | 5                                                                                   | 2                                                                                   |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 16                                                                                | 2710                                                                              | 46                                                                                | 68                                                                                | 2925                                                                              | 908                                                                               | 58                                                                                 | 3                                                                                   | 482                                                                                 | 55                                                                                  | 6                                                                                   | 477                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.52                                                                              | 0.52                                                                              | 0.01                                                                              | 0.19                                                                              | 0.19                                                                              | 0.30                                                                               | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5253                                                                              | 89                                                                                | 1810                                                                              | 5187                                                                              | 1610                                                                              | 0                                                                                  | 9                                                                                   | 1605                                                                                | 0                                                                                   | 20                                                                                  | 1590                                                                                |
| Grp Volume(v), veh/h         | 7                                                                                 | 1584                                                                              | 866                                                                               | 48                                                                                | 1915                                                                              | 9                                                                                 | 63                                                                                 | 0                                                                                   | 7                                                                                   | 32                                                                                  | 0                                                                                   | 2                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1884                                                                              | 1810                                                                              | 1729                                                                              | 1610                                                                              | 9                                                                                  | 0                                                                                   | 1605                                                                                | 20                                                                                  | 0                                                                                   | 1590                                                                                |
| Q Serve(g_s), s              | 0.5                                                                               | 49.1                                                                              | 49.5                                                                              | 3.2                                                                               | 41.1                                                                              | 0.5                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.5                                                                               | 49.1                                                                              | 49.5                                                                              | 3.2                                                                               | 41.1                                                                              | 0.5                                                                               | 36.0                                                                               | 0.0                                                                                 | 0.4                                                                                 | 36.0                                                                                | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.05                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 0.92                                                                               |                                                                                     | 1.00                                                                                | 0.84                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 16                                                                                | 1784                                                                              | 972                                                                               | 68                                                                                | 2925                                                                              | 908                                                                               | 60                                                                                 | 0                                                                                   | 482                                                                                 | 61                                                                                  | 0                                                                                   | 477                                                                                 |
| V/C Ratio(X)                 | 0.45                                                                              | 0.89                                                                              | 0.89                                                                              | 0.71                                                                              | 0.65                                                                              | 0.01                                                                              | 1.04                                                                               | 0.00                                                                                | 0.01                                                                                | 0.52                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 1784                                                                              | 972                                                                               | 103                                                                               | 2925                                                                              | 908                                                                               | 60                                                                                 | 0                                                                                   | 482                                                                                 | 61                                                                                  | 0                                                                                   | 477                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.33                                                                              | 0.33                                                                              | 0.33                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.2                                                                              | 26.0                                                                              | 26.0                                                                              | 58.6                                                                              | 38.0                                                                              | 21.5                                                                              | 58.4                                                                               | 0.0                                                                                 | 29.5                                                                                | 53.4                                                                                | 0.0                                                                                 | 29.4                                                                                |
| Incr Delay (d2), s/veh       | 7.2                                                                               | 7.0                                                                               | 12.2                                                                              | 4.5                                                                               | 1.1                                                                               | 0.0                                                                               | 128.7                                                                              | 0.0                                                                                 | 0.1                                                                                 | 28.5                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 19.5                                                                              | 22.7                                                                              | 1.5                                                                               | 19.1                                                                              | 0.2                                                                               | 4.0                                                                                | 0.0                                                                                 | 0.2                                                                                 | 1.5                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 66.4                                                                              | 33.0                                                                              | 38.2                                                                              | 63.1                                                                              | 39.1                                                                              | 21.5                                                                              | 187.0                                                                              | 0.0                                                                                 | 29.6                                                                                | 81.9                                                                                | 0.0                                                                                 | 29.5                                                                                |
| LnGrp LOS                    | E                                                                                 | C                                                                                 | D                                                                                 | E                                                                                 | D                                                                                 | C                                                                                 | F                                                                                  | A                                                                                   | C                                                                                   | F                                                                                   | A                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 2457                                                                              |                                                                                   |                                                                                   |                                                                                   | 1972                                                                              |                                                                                   |                                                                                    |                                                                                     | 70                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 34.9                                                                              |                                                                                   |                                                                                   |                                                                                   | 39.6                                                                              |                                                                                   |                                                                                    |                                                                                     | 171.3                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                    |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              | 68.4                                                                              |                                                                                   | 40.6                                                                              | 5.2                                                                               | 74.2                                                                              |                                                                                    | 40.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 6.5                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               | * 4.2                                                                             | 6.5                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.8                                                                               | * 62                                                                              |                                                                                   | 36.0                                                                              | * 5                                                                               | 63.7                                                                              |                                                                                    | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.2                                                                               | 51.5                                                                              |                                                                                   | 38.0                                                                              | 2.5                                                                               | 43.1                                                                              |                                                                                    | 38.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 9.7                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 15.9                                                                              |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 39.4 |
| HCM 6th LOS        | D    |

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/22/2019

|                      |  |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | Ø6   |
| Lane Configurations  |  |  |  |  |                                                                                   |  |      |
| Traffic Volume (vph) | 3                                                                                 | 2314                                                                              | 3                                                                                 | 1939                                                                              | 5                                                                                 | 0                                                                                 |      |
| Future Volume (vph)  | 3                                                                                 | 2314                                                                              | 3                                                                                 | 1939                                                                              | 5                                                                                 | 0                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                |      |
| Protected Phases     | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |                                                                                   | 2                                                                                 | 6    |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |      |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.2                                                                               | 23.5                                                                              | 9.2                                                                               | 23.5                                                                              | 14.6                                                                              | 14.6                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 95.0                                                                              | 10.0                                                                              | 95.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0 |
| Total Split (%)      | 8.3%                                                                              | 79.2%                                                                             | 8.3%                                                                              | 79.2%                                                                             | 12.5%                                                                             | 12.5%                                                                             | 13%  |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                               |      |
| Lead/Lag             | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                   |      |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø2 |  Ø4 (R) |  Ø3 |
| 15 s                                                                                   | 95 s                                                                                       | 10 s                                                                                     |
|  Ø6 |  Ø8 (R) |  Ø7 |
| 15 s                                                                                   | 95 s                                                                                       | 10 s                                                                                     |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |                                                                                   |                                                                                    |   |                                                                                     |                                                                                     |   |                                                                                     |
| Traffic Volume (veh/h)       | 3                                                                                 | 2314                                                                                                                                                                                                                                                  | 1                                                                                 | 3                                                                                 | 1939                                                                                                                                                                                                                                                  | 0                                                                                 | 5                                                                                  | 0                                                                                                                                                                       | 2                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2314                                                                                                                                                                                                                                                  | 1                                                                                 | 3                                                                                 | 1939                                                                                                                                                                                                                                                  | 0                                                                                 | 5                                                                                  | 0                                                                                                                                                                       | 2                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                                                                                                         |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2515                                                                                                                                                                                                                                                  | 1                                                                                 | 3                                                                                 | 2108                                                                                                                                                                                                                                                  | 0                                                                                 | 5                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                                                                                                    | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 221                                                                               | 3950                                                                                                                                                                                                                                                  | 2                                                                                 | 221                                                                               | 3825                                                                                                                                                                                                                                                  | 0                                                                                 | 78                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 24                                                                                                                                                                      | 0                                                                                   |
| Arrive On Green              | 0.24                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.12                                                                              | 0.74                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.01                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5355                                                                                                                                                                                                                                                  | 2                                                                                 | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Grp Volume(v), veh/h         | 3                                                                                 | 1624                                                                                                                                                                                                                                                  | 892                                                                               | 3                                                                                 | 2108                                                                                                                                                                                                                                                  | 0                                                                                 | 5                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1900                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.2                                                                               | 21.6                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.2                                                                               | 21.6                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 0.00                                                                                | 0.00                                                                                |                                                                                                                                                                         | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 221                                                                               | 2550                                                                                                                                                                                                                                                  | 1401                                                                              | 221                                                                               | 3825                                                                                                                                                                                                                                                  | 0                                                                                 | 78                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 24                                                                                                                                                                      | 0                                                                                   |
| V/C Ratio(X)                 | 0.01                                                                              | 0.64                                                                                                                                                                                                                                                  | 0.64                                                                              | 0.01                                                                              | 0.55                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.06                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 221                                                                               | 2550                                                                                                                                                                                                                                                  | 1401                                                                              | 221                                                                               | 3825                                                                                                                                                                                                                                                  | 0                                                                                 | 185                                                                                | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 165                                                                                                                                                                     | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 2.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(l)           | 0.36                                                                              | 0.36                                                                                                                                                                                                                                                  | 0.36                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 39.9                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 46.3                                                                              | 7.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 58.7                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.4                                                                                                                                                                                                                                                   | 0.8                                                                               | 0.0                                                                               | 0.6                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.3                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.2                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.1                                                                               | 5.8                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 39.9                                                                              | 0.4                                                                                                                                                                                                                                                   | 0.8                                                                               | 46.3                                                                              | 7.5                                                                                                                                                                                                                                                   | 0.0                                                                               | 59.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                  | A                                                                                                                                                                       | A                                                                                   | A                                                                                   | A                                                                                                                                                                       | A                                                                                   |
| Approach Vol, veh/h          | 2519                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2111                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    | 5                                                                                                                                                                       |                                                                                     | 0                                                                                   |                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        | 0.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 7.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    | 59.0                                                                                                                                                                    |                                                                                     | 0.0                                                                                 |                                                                                                                                                                         |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    | E                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 3                                                                                 | 4                                                                                 |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                    | 7                                                                                                                                                                       | 8                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 6.1                                                                               |                                                                                                                                                                                                                                                       | 18.9                                                                              | 95.0                                                                              |                                                                                                                                                                                                                                                       | 6.1                                                                               |                                                                                    | 18.9                                                                                                                                                                    | 95.0                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       | 4.2                                                                               | * 6.5                                                                             |                                                                                                                                                                                                                                                       | 4.6                                                                               |                                                                                    | 4.2                                                                                                                                                                     | * 6.5                                                                               |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                                                                                                                                                                                       | 5.8                                                                               | * 89                                                                              |                                                                                                                                                                                                                                                       | 10.4                                                                              |                                                                                    | 5.8                                                                                                                                                                     | * 89                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.4                                                                               |                                                                                                                                                                                                                                                       | 2.2                                                                               | 2.0                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                    | 2.2                                                                                                                                                                     | 23.6                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               | 59.5                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                    | 0.0                                                                                                                                                                     | 39.5                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 3.9                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

| Intersection             |       |      |      |       |      |      |      |      |      |      |      |      |
|--------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 24.1  |      |      |       |      |      |      |      |      |      |      |      |
| Movement                 | EBL   | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      | ↱ ↑↑↑ |      |      | ↱ ↑↑↑ |      |      | ↱    | ↱    |      | ↱    | ↱    |      |
| Traffic Vol, veh/h       | 2     | 2304 | 12   | 23    | 1930 | 16   | 2    | 0    | 9    | 37   | 0    | 5    |
| Future Vol, veh/h        | 2     | 2304 | 12   | 23    | 1930 | 16   | 2    | 0    | 9    | 37   | 0    | 5    |
| Conflicting Peds, #/hr   | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free  | Free | Free | Free  | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -     | -    | None | -     | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | 155   | -    | -    | 155   | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Veh in Median Storage, # | -     | 0    | -    | -     | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -     | 0    | -    | -     | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 92    | 92   | 92   | 92    | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 2     | 2504 | 13   | 25    | 2098 | 17   | 2    | 0    | 10   | 40   | 0    | 5    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |      |      | Minor2 |      |      |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 2115   | 0 | 0 | 2517   | 0 | 0 | 3404   | 4680 | 1259 | 3163   | 4678 | 1058 |
| Stage 1              | -      | - | - | -      | - | - | 2515   | 2515 | -    | 2157   | 2157 | -    |
| Stage 2              | -      | - | - | -      | - | - | 889    | 2165 | -    | 1006   | 2521 | -    |
| Critical Hdwy        | 5.3    | - | - | 5.3    | - | - | 6.4    | 6.5  | 7.1  | 6.4    | 6.5  | 7.1  |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 7.3    | 5.5  | -    | 7.3    | 5.5  | -    |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.7    | 5.5  | -    | 6.7    | 5.5  | -    |
| Follow-up Hdwy       | 3.1    | - | - | 3.1    | - | - | 3.8    | 4    | 3.9  | 3.8    | 4    | 3.9  |
| Pot Cap-1 Maneuver   | 112    | - | - | 70     | - | - | 8      | 1    | 141  | ~ 12   | 1    | 192  |
| Stage 1              | -      | - | - | -      | - | - | 16     | 57   | -    | ~ 30   | 88   | -    |
| Stage 2              | -      | - | - | -      | - | - | 279    | 87   | -    | 236    | 57   | -    |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -    | -    | -      | -    | -    |
| Mov Cap-1 Maneuver   | 112    | - | - | 70     | - | - | 6      | 1    | 141  | ~ 8    | 1    | 192  |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 6      | 1    | -    | ~ 8    | 1    | -    |
| Stage 1              | -      | - | - | -      | - | - | 16     | 56   | -    | ~ 29   | 57   | -    |
| Stage 2              | -      | - | - | -      | - | - | 174    | 56   | -    | 216    | 56   | -    |

| Approach             | EB | WB | NB  | SB        |
|----------------------|----|----|-----|-----------|
| HCM Control Delay, s | 0  | 1  | 173 | \$ 2396.6 |
| HCM LOS              |    |    | F   | F         |

| Minor Lane/Major Mvmt | NBLn1    | NBLn2 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1     | SBLn2 |
|-----------------------|----------|-------|-------|-----|-----|-------|-----|-----|-----------|-------|
| Capacity (veh/h)      | 6        | 141   | 112   | -   | -   | 70    | -   | -   | 8         | 192   |
| HCM Lane V/C Ratio    | 0.362    | 0.069 | 0.019 | -   | -   | 0.357 | -   | -   | 5.027     | 0.028 |
| HCM Control Delay (s) | \$ 805.6 | 32.4  | 37.8  | -   | -   | 82.6  | -   | -   | \$ 2717.2 | 24.3  |
| HCM Lane LOS          | F        | D     | E     | -   | -   | F     | -   | -   | F         | C     |
| HCM 95th %tile Q(veh) | 0.7      | 0.2   | 0.1   | -   | -   | 1.3   | -   | -   | 6.4       | 0.1   |

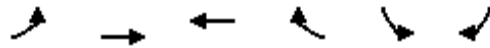
| Notes                      |                        |                            |  |  |  |  |  |  |                                |  |  |  |
|----------------------------|------------------------|----------------------------|--|--|--|--|--|--|--------------------------------|--|--|--|
| ~: Volume exceeds capacity | \$: Delay exceeds 300s | +: Computation Not Defined |  |  |  |  |  |  | *: All major volume in platoon |  |  |  |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/22/2019



| Lane Group           | EBL  | EBT   | WBT   | WBR   | SBL   | SBR  |
|----------------------|------|-------|-------|-------|-------|------|
| Lane Configurations  | ↰    | ↑↑↑   | ↑↑↑   | ↱     | ↰↱    | ↱    |
| Traffic Volume (vph) | 14   | 2476  | 2007  | 20    | 27    | 16   |
| Future Volume (vph)  | 14   | 2476  | 2007  | 20    | 27    | 16   |
| Turn Type            | Prot | NA    | NA    | Perm  | Prot  | Free |
| Protected Phases     | 7    | 4     | 8     |       | 6     |      |
| Permitted Phases     |      |       |       | 8     |       | Free |
| Detector Phase       | 7    | 4     | 8     | 8     | 6     |      |
| Switch Phase         |      |       |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  |      |
| Minimum Split (s)    | 9.2  | 28.5  | 30.5  | 30.5  | 26.6  |      |
| Total Split (s)      | 10.0 | 91.0  | 81.0  | 81.0  | 29.0  |      |
| Total Split (%)      | 8.3% | 75.8% | 67.5% | 67.5% | 24.2% |      |
| Yellow Time (s)      | 3.2  | 5.5   | 5.5   | 5.5   | 3.6   |      |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |      |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.2  | 6.5   | 6.5   | 6.5   | 4.6   |      |
| Lead/Lag             | Lead |       | Lag   | Lag   |       |      |
| Lead-Lag Optimize?   | Yes  |       | Yes   | Yes   |       |      |
| Recall Mode          | None | None  | None  | None  | C-Max |      |

### Intersection Summary

Cycle Length: 120

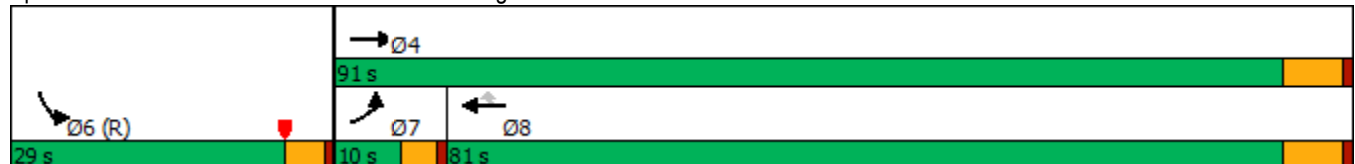
Actuated Cycle Length: 120

Offset: 48 (40%), Referenced to phase 2: and 6:SBL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

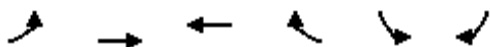
Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/22/2019



| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | SBL                                                                                                                                                                 | SBR                                                                               |      |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations          |  |    |    |  |   |  |      |
| Traffic Volume (veh/h)       | 14                                                                                | 2476                                                                                                                                                                                                                                                  | 2007                                                                                                                                                                                                                                                  | 20                                                                                | 27                                                                                                                                                                  | 16                                                                                |      |
| Future Volume (veh/h)        | 14                                                                                | 2476                                                                                                                                                                                                                                                  | 2007                                                                                                                                                                                                                                                  | 20                                                                                | 27                                                                                                                                                                  | 16                                                                                |      |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 |      |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              |      |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              |      |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                    | No                                                                                                                                                                                                                                                    |                                                                                   | No                                                                                                                                                                  |                                                                                   |      |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                              |      |
| Adj Flow Rate, veh/h         | 15                                                                                | 2721                                                                                                                                                                                                                                                  | 2205                                                                                                                                                                                                                                                  | 21                                                                                | 30                                                                                                                                                                  | 0                                                                                 |      |
| Peak Hour Factor             | 0.91                                                                              | 0.91                                                                                                                                                                                                                                                  | 0.91                                                                                                                                                                                                                                                  | 0.91                                                                              | 0.91                                                                                                                                                                | 0.91                                                                              |      |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 |      |
| Cap, veh/h                   | 30                                                                                | 3479                                                                                                                                                                                                                                                  | 3213                                                                                                                                                                                                                                                  | 976                                                                               | 831                                                                                                                                                                 |                                                                                   |      |
| Arrive On Green              | 0.02                                                                              | 0.67                                                                                                                                                                                                                                                  | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.24                                                                                                                                                                | 0.00                                                                              |      |
| Sat Flow, veh/h              | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 5358                                                                                                                                                                                                                                                  | 1575                                                                              | 3510                                                                                                                                                                | 1610                                                                              |      |
| Grp Volume(v), veh/h         | 15                                                                                | 2721                                                                                                                                                                                                                                                  | 2205                                                                                                                                                                                                                                                  | 21                                                                                | 30                                                                                                                                                                  | 0                                                                                 |      |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1729                                                                                                                                                                                                                                                  | 1575                                                                              | 1755                                                                                                                                                                | 1610                                                                              |      |
| Q Serve(g_s), s              | 1.0                                                                               | 43.6                                                                                                                                                                                                                                                  | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.8                                                                                                                                                                 | 0.0                                                                               |      |
| Cycle Q Clear(g_c), s        | 1.0                                                                               | 43.6                                                                                                                                                                                                                                                  | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.8                                                                                                                                                                 | 0.0                                                                               |      |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              |      |
| Lane Grp Cap(c), veh/h       | 30                                                                                | 3479                                                                                                                                                                                                                                                  | 3213                                                                                                                                                                                                                                                  | 976                                                                               | 831                                                                                                                                                                 |                                                                                   |      |
| V/C Ratio(X)                 | 0.51                                                                              | 0.78                                                                                                                                                                                                                                                  | 0.69                                                                                                                                                                                                                                                  | 0.02                                                                              | 0.04                                                                                                                                                                |                                                                                   |      |
| Avail Cap(c_a), veh/h        | 87                                                                                | 3653                                                                                                                                                                                                                                                  | 3220                                                                                                                                                                                                                                                  | 978                                                                               | 831                                                                                                                                                                 |                                                                                   |      |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 2.00                                                                                                                                                                                                                                                  | 2.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              |      |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.09                                                                                                                                                                                                                                                  | 0.09                                                                              | 1.00                                                                                                                                                                | 0.00                                                                              |      |
| Uniform Delay (d), s/veh     | 58.5                                                                              | 13.7                                                                                                                                                                                                                                                  | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 35.3                                                                                                                                                                | 0.0                                                                               |      |
| Incr Delay (d2), s/veh       | 4.9                                                                               | 1.2                                                                                                                                                                                                                                                   | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.1                                                                                                                                                                 | 0.0                                                                               |      |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                               |      |
| %ile BackOfQ(50%),veh/ln     | 0.5                                                                               | 13.7                                                                                                                                                                                                                                                  | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.4                                                                                                                                                                 | 0.0                                                                               |      |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                   |      |
| LnGrp Delay(d),s/veh         | 63.4                                                                              | 14.9                                                                                                                                                                                                                                                  | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 35.3                                                                                                                                                                | 0.0                                                                               |      |
| LnGrp LOS                    | E                                                                                 | B                                                                                                                                                                                                                                                     | A                                                                                                                                                                                                                                                     | A                                                                                 | D                                                                                                                                                                   |                                                                                   |      |
| Approach Vol, veh/h          |                                                                                   | 2736                                                                                                                                                                                                                                                  | 2226                                                                                                                                                                                                                                                  |                                                                                   | 30                                                                                                                                                                  | A                                                                                 |      |
| Approach Delay, s/veh        |                                                                                   | 15.1                                                                                                                                                                                                                                                  | 0.1                                                                                                                                                                                                                                                   |                                                                                   | 35.3                                                                                                                                                                |                                                                                   |      |
| Approach LOS                 |                                                                                   | B                                                                                                                                                                                                                                                     | A                                                                                                                                                                                                                                                     |                                                                                   | D                                                                                                                                                                   |                                                                                   |      |
| Timer - Assigned Phs         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 4                                                                                 | 6                                                                                                                                                                   | 7                                                                                 | 8    |
| Phs Duration (G+Y+Rc), s     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 87.0                                                                              | 33.0                                                                                                                                                                | 6.2                                                                               | 80.8 |
| Change Period (Y+Rc), s      |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 6.5                                                                               | 4.6                                                                                                                                                                 | * 4.2                                                                             | 6.5  |
| Max Green Setting (Gmax), s  |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 84.5                                                                              | 24.4                                                                                                                                                                | * 5.8                                                                             | 74.5 |
| Max Q Clear Time (g_c+I1), s |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 45.6                                                                              | 2.8                                                                                                                                                                 | 3.0                                                                               | 2.0  |
| Green Ext Time (p_c), s      |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 34.9                                                                              | 0.1                                                                                                                                                                 | 0.0                                                                               | 45.6 |

### Intersection Summary

|                    |     |
|--------------------|-----|
| HCM 6th Ctrl Delay | 8.5 |
| HCM 6th LOS        | A   |

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/23/2019

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |   |    |  |  |  |  |
| Traffic Volume (vph) | 148                                                                               | 1665                                                                              | 518                                                                               | 156                                                                               | 1358                                                                              | 146                                                                               | 350                                                                                | 279                                                                                 | 158                                                                                 | 189                                                                                 | 654                                                                                 | 310                                                                                 |
| Future Volume (vph)  | 148                                                                               | 1665                                                                              | 518                                                                               | 156                                                                               | 1358                                                                              | 146                                                                               | 350                                                                                | 279                                                                                 | 158                                                                                 | 189                                                                                 | 654                                                                                 | 310                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                                | 10.0                                                                                | 5.0                                                                                 | 5.0                                                                                 | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                                | 15.8                                                                                | 8.7                                                                                 | 8.7                                                                                 | 49.8                                                                                | 49.8                                                                                |
| Total Split (s)      | 13.2                                                                              | 47.2                                                                              | 47.2                                                                              | 10.0                                                                              | 44.0                                                                              | 44.0                                                                              | 11.8                                                                               | 51.8                                                                                | 10.0                                                                                | 11.0                                                                                | 51.0                                                                                | 51.0                                                                                |
| Total Split (%)      | 11.0%                                                                             | 39.3%                                                                             | 39.3%                                                                             | 8.3%                                                                              | 36.7%                                                                             | 36.7%                                                                             | 9.8%                                                                               | 43.2%                                                                               | 8.3%                                                                                | 9.2%                                                                                | 42.5%                                                                               | 42.5%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                                | 4.8                                                                                 | 3.2                                                                                 | 3.2                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                                | 1.0                                                                                 | 0.5                                                                                 | 0.5                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                                | 5.8                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                                | Lag                                                                                 | Lead                                                                                | Lead                                                                                | Lead                                                                                | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                               | Max                                                                                 | None                                                                                | None                                                                                | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

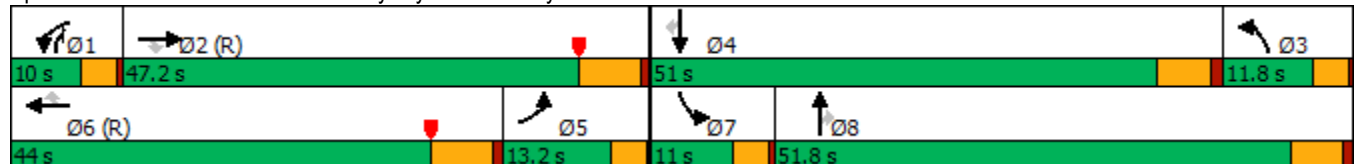
Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (veh/h)       | 148                                                                               | 1665                                                                              | 518                                                                               | 156                                                                               | 1358                                                                              | 146                                                                               | 350                                                                                 | 279                                                                                 | 158                                                                                 | 189                                                                                 | 654                                                                                 | 310                                                                                 |
| Future Volume (veh/h)        | 148                                                                               | 1665                                                                              | 518                                                                               | 156                                                                               | 1358                                                                              | 146                                                                               | 350                                                                                 | 279                                                                                 | 158                                                                                 | 189                                                                                 | 654                                                                                 | 310                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 164                                                                               | 1850                                                                              | 576                                                                               | 173                                                                               | 1509                                                                              | 162                                                                               | 389                                                                                 | 310                                                                                 | 176                                                                                 | 210                                                                                 | 727                                                                                 | 344                                                                                 |
| Peak Hour Factor             | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                              | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                | 0.90                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 1533                                                                              | 5863                                                                              | 1820                                                                              | 184                                                                               | 1621                                                                              | 503                                                                               | 237                                                                                 | 1447                                                                                | 1285                                                                                | 214                                                                                 | 1360                                                                                | 606                                                                                 |
| Arrive On Green              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.05                                                                              | 0.31                                                                              | 0.31                                                                              | 0.07                                                                                | 0.40                                                                                | 0.40                                                                                | 0.06                                                                                | 0.38                                                                                | 0.38                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                              | 1610                                                                              | 3510                                                                              | 5187                                                                              | 1610                                                                              | 3510                                                                                | 3610                                                                                | 2834                                                                                | 3510                                                                                | 3610                                                                                | 1610                                                                                |
| Grp Volume(v), veh/h         | 164                                                                               | 1850                                                                              | 576                                                                               | 173                                                                               | 1509                                                                              | 162                                                                               | 389                                                                                 | 310                                                                                 | 176                                                                                 | 210                                                                                 | 727                                                                                 | 344                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1610                                                                              | 1755                                                                              | 1729                                                                              | 1610                                                                              | 1755                                                                                | 1805                                                                                | 1417                                                                                | 1755                                                                                | 1805                                                                                | 1610                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 5.9                                                                               | 33.8                                                                              | 18.1                                                                              | 8.1                                                                                 | 6.8                                                                                 | 4.3                                                                                 | 7.2                                                                                 | 18.9                                                                                | 20.3                                                                                |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 5.9                                                                               | 33.8                                                                              | 18.1                                                                              | 8.1                                                                                 | 6.8                                                                                 | 4.3                                                                                 | 7.2                                                                                 | 18.9                                                                                | 20.3                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 1533                                                                              | 5863                                                                              | 1820                                                                              | 184                                                                               | 1621                                                                              | 503                                                                               | 237                                                                                 | 1447                                                                                | 1285                                                                                | 214                                                                                 | 1360                                                                                | 606                                                                                 |
| V/C Ratio(X)                 | 0.11                                                                              | 0.32                                                                              | 0.32                                                                              | 0.94                                                                              | 0.93                                                                              | 0.32                                                                              | 1.64                                                                                | 0.21                                                                                | 0.14                                                                                | 0.98                                                                                | 0.53                                                                                | 0.57                                                                                |
| Avail Cap(c_a), veh/h        | 1533                                                                              | 5863                                                                              | 1820                                                                              | 184                                                                               | 1621                                                                              | 503                                                                               | 237                                                                                 | 1447                                                                                | 1285                                                                                | 214                                                                                 | 1360                                                                                | 606                                                                                 |
| HCM Platoon Ratio            | 1.33                                                                              | 1.33                                                                              | 1.33                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.60                                                                              | 0.60                                                                              | 0.60                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 56.7                                                                              | 40.0                                                                              | 121.6                                                                             | 55.9                                                                                | 23.6                                                                                | 19.1                                                                                | 56.3                                                                                | 29.2                                                                                | 29.6                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.1                                                                               | 0.3                                                                               | 48.3                                                                              | 11.0                                                                              | 1.7                                                                               | 307.0                                                                               | 0.3                                                                                 | 0.2                                                                                 | 56.5                                                                                | 1.5                                                                                 | 3.8                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 3.8                                                                               | 15.4                                                                              | 7.7                                                                               | 13.6                                                                                | 2.8                                                                                 | 1.4                                                                                 | 4.8                                                                                 | 8.1                                                                                 | 8.2                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 0.1                                                                               | 0.3                                                                               | 104.9                                                                             | 51.0                                                                              | 123.3                                                                             | 363.0                                                                               | 23.9                                                                                | 19.3                                                                                | 112.8                                                                               | 30.7                                                                                | 33.5                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                 | A                                                                                 | F                                                                                 | D                                                                                 | F                                                                                 | F                                                                                   | C                                                                                   | B                                                                                   | F                                                                                   | C                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 2590                                                                              |                                                                                   |                                                                                   |                                                                                   | 1844                                                                              |                                                                                   |                                                                                     |                                                                                     | 875                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 62.4                                                                              |                                                                                   |                                                                                     |                                                                                     | 173.7                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.0                                                                              | 144.2                                                                             | 13.9                                                                              | 51.0                                                                              | 110.2                                                                             | 44.0                                                                              | 11.0                                                                                | 53.9                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                               | 5.8                                                                               | * 5.8                                                                             | 6.5                                                                               | * 6.5                                                                             | 3.7                                                                                 | 5.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.3                                                                               | 40.7                                                                              | 8.1                                                                               | * 45                                                                              | 9.5                                                                               | * 38                                                                              | 7.3                                                                                 | 46.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 7.9                                                                               | 2.0                                                                               | 10.1                                                                              | 22.3                                                                              | 2.0                                                                               | 35.8                                                                              | 9.2                                                                                 | 8.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 30.0                                                                              | 0.0                                                                               | 6.0                                                                               | 0.1                                                                               | 1.5                                                                               | 0.0                                                                                 | 2.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 49.3                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↱     | ↱     |
| Traffic Volume (vph) | 1568  | 1344  | 216   | 0     | 369   |
| Future Volume (vph)  | 1568  | 1344  | 216   | 0     | 369   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 58.0  | 58.0  | 27.0  | 27.0  | 27.0  |
| Total Split (%)      | 68.2% | 68.2% | 31.8% | 31.8% | 31.8% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

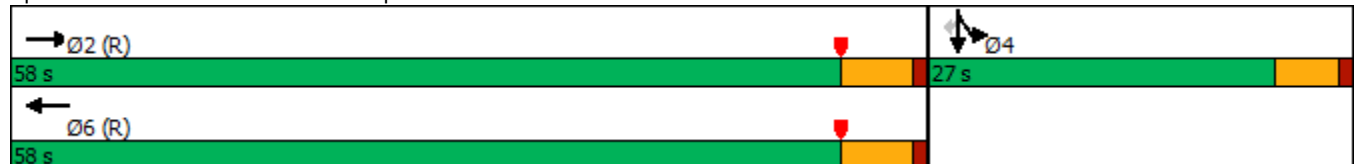
Actuated Cycle Length: 85

Offset: 33 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/22/2019

|                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                  |                                                                                   |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |                                                                                     |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                               | 0                                                                                 | 1568                                                                              | 445                                                                               | 0                                                                                 | 1344                                                                              | 131                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 216                                                                                 | 0                                                                                   | 369                                                                                 |
| Future Volume (veh/h)                                                | 0                                                                                 | 1568                                                                              | 445                                                                               | 0                                                                                 | 1344                                                                              | 131                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 216                                                                                 | 0                                                                                   | 369                                                                                 |
| Initial Q (Qb), veh                                                  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                  | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                     | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                               | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              |                                                                                    |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                 | 0                                                                                 | 1668                                                                              | 436                                                                               | 0                                                                                 | 1430                                                                              | 137                                                                               |                                                                                    |                                                                                     |                                                                                     | 329                                                                                 | 0                                                                                   | 183                                                                                 |
| Peak Hour Factor                                                     | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                |
| Percent Heavy Veh, %                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                           | 0                                                                                 | 2978                                                                              | 764                                                                               | 0                                                                                 | 3496                                                                              | 335                                                                               |                                                                                    |                                                                                     |                                                                                     | 538                                                                                 | 0                                                                                   | 239                                                                                 |
| Arrive On Green                                                      | 0.00                                                                              | 0.73                                                                              | 0.73                                                                              | 0.00                                                                              | 0.73                                                                              | 0.73                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.15                                                                                | 0.00                                                                                | 0.15                                                                                |
| Sat Flow, veh/h                                                      | 0                                                                                 | 4263                                                                              | 1049                                                                              | 0                                                                                 | 4974                                                                              | 460                                                                               |                                                                                    |                                                                                     |                                                                                     | 3619                                                                                | 0                                                                                   | 1607                                                                                |
| Grp Volume(v), veh/h                                                 | 0                                                                                 | 1405                                                                              | 699                                                                               | 0                                                                                 | 1029                                                                              | 538                                                                               |                                                                                    |                                                                                     |                                                                                     | 329                                                                                 | 0                                                                                   | 183                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                             | 0                                                                                 | 1729                                                                              | 1683                                                                              | 0                                                                                 | 1729                                                                              | 1806                                                                              |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 1607                                                                                |
| Q Serve(g_s), s                                                      | 0.0                                                                               | 15.8                                                                              | 16.4                                                                              | 0.0                                                                               | 9.8                                                                               | 9.8                                                                               |                                                                                    |                                                                                     |                                                                                     | 7.2                                                                                 | 0.0                                                                                 | 9.3                                                                                 |
| Cycle Q Clear(g_c), s                                                | 0.0                                                                               | 15.8                                                                              | 16.4                                                                              | 0.0                                                                               | 9.8                                                                               | 9.8                                                                               |                                                                                    |                                                                                     |                                                                                     | 7.2                                                                                 | 0.0                                                                                 | 9.3                                                                                 |
| Prop In Lane                                                         | 0.00                                                                              |                                                                                   | 0.62                                                                              | 0.00                                                                              |                                                                                   | 0.25                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                               | 0                                                                                 | 2517                                                                              | 1225                                                                              | 0                                                                                 | 2517                                                                              | 1314                                                                              |                                                                                    |                                                                                     |                                                                                     | 538                                                                                 | 0                                                                                   | 239                                                                                 |
| V/C Ratio(X)                                                         | 0.00                                                                              | 0.56                                                                              | 0.57                                                                              | 0.00                                                                              | 0.41                                                                              | 0.41                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.61                                                                                | 0.00                                                                                | 0.77                                                                                |
| Avail Cap(c_a), veh/h                                                | 0                                                                                 | 2517                                                                              | 1225                                                                              | 0                                                                                 | 2517                                                                              | 1314                                                                              |                                                                                    |                                                                                     |                                                                                     | 937                                                                                 | 0                                                                                   | 416                                                                                 |
| HCM Platoon Ratio                                                    | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                   | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.79                                                                              | 0.79                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                             | 0.0                                                                               | 5.3                                                                               | 5.4                                                                               | 0.0                                                                               | 4.5                                                                               | 4.5                                                                               |                                                                                    |                                                                                     |                                                                                     | 33.9                                                                                | 0.0                                                                                 | 34.8                                                                                |
| Incr Delay (d2), s/veh                                               | 0.0                                                                               | 0.9                                                                               | 1.9                                                                               | 0.0                                                                               | 0.4                                                                               | 0.7                                                                               |                                                                                    |                                                                                     |                                                                                     | 1.1                                                                                 | 0.0                                                                                 | 5.1                                                                                 |
| Initial Q Delay(d3),s/veh                                            | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                             | 0.0                                                                               | 3.2                                                                               | 3.6                                                                               | 0.0                                                                               | 1.9                                                                               | 2.1                                                                               |                                                                                    |                                                                                     |                                                                                     | 3.1                                                                                 | 0.0                                                                                 | 3.8                                                                                 |
| Unsig. Movement Delay, s/veh                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                 | 0.0                                                                               | 6.2                                                                               | 7.3                                                                               | 0.0                                                                               | 4.9                                                                               | 5.2                                                                               |                                                                                    |                                                                                     |                                                                                     | 35.0                                                                                | 0.0                                                                                 | 39.8                                                                                |
| LnGrp LOS                                                            | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h                                                  |                                                                                   | 2104                                                                              |                                                                                   |                                                                                   | 1567                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 512                                                                                 |                                                                                     |
| Approach Delay, s/veh                                                |                                                                                   | 6.6                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 36.7                                                                                |                                                                                     |
| Approach LOS                                                         |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                 |                                                                                   | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                             |                                                                                   | 67.4                                                                              |                                                                                   | 17.6                                                                              |                                                                                   | 67.4                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                              |                                                                                   | 5.5                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.5                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                          |                                                                                   | 52.5                                                                              |                                                                                   | 22.0                                                                              |                                                                                   | 52.5                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                         |                                                                                   | 18.4                                                                              |                                                                                   | 11.3                                                                              |                                                                                   | 11.8                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                              |                                                                                   | 19.0                                                                              |                                                                                   | 1.3                                                                               |                                                                                   | 12.7                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                   |                                                                                   |                                                                                   | 9.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                          |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved volume balancing among the lanes for turning movement. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                      |  |                                                                                                                                                                      |                                                                                                                                                                      |  |  |                                                                                    |  |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                               | NBT                                                                                                                                                                 | NBR                                                                                 |
| Lane Configurations  |  |    |    |  |  |   |    |
| Traffic Volume (vph) | 222                                                                               | 1506                                                                                                                                                                                                                                                  | 947                                                                                                                                                                                                                                                   | 206                                                                               | 607                                                                               | 8                                                                                                                                                                   | 303                                                                                 |
| Future Volume (vph)  | 222                                                                               | 1506                                                                                                                                                                                                                                                  | 947                                                                                                                                                                                                                                                   | 206                                                                               | 607                                                                               | 8                                                                                                                                                                   | 303                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Split                                                                             | NA                                                                                                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     |                                                                                   | 8                                                                                 | 8                                                                                                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                     | 8                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     | 6                                                                                 | 8                                                                                 | 8                                                                                                                                                                   | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 9.5                                                                               | 10.5                                                                                                                                                                                                                                                  | 33.5                                                                                                                                                                                                                                                  | 33.5                                                                              | 10.0                                                                              | 10.0                                                                                                                                                                | 10.0                                                                                |
| Total Split (s)      | 23.0                                                                              | 52.0                                                                                                                                                                                                                                                  | 33.5                                                                                                                                                                                                                                                  | 33.5                                                                              | 33.0                                                                              | 33.0                                                                                                                                                                | 33.0                                                                                |
| Total Split (%)      | 25.7%                                                                             | 58.1%                                                                                                                                                                                                                                                 | 37.4%                                                                                                                                                                                                                                                 | 37.4%                                                                             | 36.9%                                                                             | 36.9%                                                                                                                                                               | 36.9%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                               | 4.0                                                                               | 4.0                                                                                                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.5                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Lead/Lag             | Lead                                                                              |                                                                                                                                                                                                                                                       | Lag                                                                                                                                                                                                                                                   | Lag                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                                   | Yes                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | Max                                                                               | Max                                                                                                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 89.5

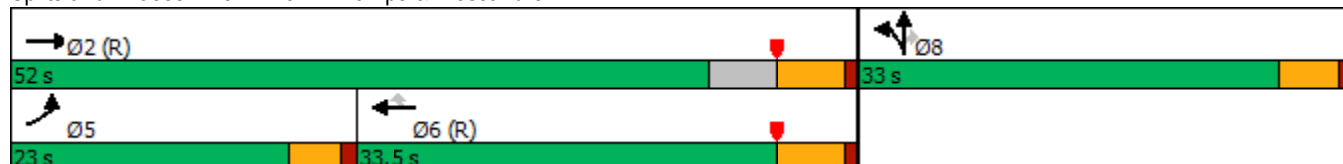
Actuated Cycle Length: 89.5

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps &amp; Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |   |                                                                                      |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)       | 222                                                                               | 1506                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 947                                                                                                                                                                                                                                                   | 206                                                                               | 607                                                                                 | 8                                                                                                                                                                       | 303                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 222                                                                               | 1506                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 947                                                                                                                                                                                                                                                   | 206                                                                               | 607                                                                                 | 8                                                                                                                                                                       | 303                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h         | 236                                                                               | 1602                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1007                                                                                                                                                                                                                                                  | 103                                                                               | 698                                                                                 | 0                                                                                                                                                                       | 106                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor             | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                                | 0.94                                                                                                                                                                    | 0.94                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                   | 274                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1924                                                                                                                                                                                                                                                  | 585                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green              | 0.15                                                                              | 0.57                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.37                                                                                                                                                                                                                                                  | 0.37                                                                              | 0.31                                                                                | 0.00                                                                                                                                                                    | 0.31                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h              | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1576                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h         | 236                                                                               | 1602                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1007                                                                                                                                                                                                                                                  | 103                                                                               | 698                                                                                 | 0                                                                                                                                                                       | 106                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1576                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 11.5                                                                              | 17.2                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 13.6                                                                                                                                                                                                                                                  | 4.0                                                                               | 14.8                                                                                | 0.0                                                                                                                                                                     | 4.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 11.5                                                                              | 17.2                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 13.6                                                                                                                                                                                                                                                  | 4.0                                                                               | 14.8                                                                                | 0.0                                                                                                                                                                     | 4.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 274                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1924                                                                                                                                                                                                                                                  | 585                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.86                                                                              | 0.54                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.52                                                                                                                                                                                                                                                  | 0.18                                                                              | 0.62                                                                                | 0.00                                                                                                                                                                    | 0.21                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 372                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1924                                                                                                                                                                                                                                                  | 585                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.75                                                                              | 0.75                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 37.3                                                                              | 11.9                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 22.1                                                                                                                                                                                                                                                  | 19.1                                                                              | 26.5                                                                                | 0.0                                                                                                                                                                     | 22.9                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 10.2                                                                              | 0.5                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 0.7                                                                               | 2.6                                                                                 | 0.0                                                                                                                                                                     | 1.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 5.4                                                                               | 5.3                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 5.1                                                                                                                                                                                                                                                   | 1.4                                                                               | 6.3                                                                                 | 0.0                                                                                                                                                                     | 1.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 47.5                                                                              | 12.4                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 23.1                                                                                                                                                                                                                                                  | 19.7                                                                              | 29.0                                                                                | 0.0                                                                                                                                                                     | 23.8                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | D                                                                                 | B                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | B                                                                                 | C                                                                                   | A                                                                                                                                                                       | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 1838                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1110                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 804                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 16.9                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 22.8                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 28.3                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 57.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 18.1                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 38.9                                                                                |                                                                                                                                                                         |                                                                                     | 33.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                                 |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 46.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 18.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 28.0                                                                                |                                                                                                                                                                         |                                                                                     | 28.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 19.2                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 13.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 15.6                                                                                |                                                                                                                                                                         |                                                                                     | 16.8                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 12.2                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.1                                                                                 |                                                                                                                                                                         |                                                                                     | 2.3                                                                                 |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 21.1                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## **APPENDIX 5.2:**

### **E+P CONDITIONS TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS**

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### Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

|                                                                                 |           |            |           |                                            |           |                                     |                  |
|---------------------------------------------------------------------------------|-----------|------------|-----------|--------------------------------------------|-----------|-------------------------------------|------------------|
| <u>DIST</u>                                                                     | <u>CO</u> | <u>RTE</u> | <u>PM</u> | <u>CALC</u>                                | <u>RV</u> | <u>DATE</u>                         | <u>E+P</u>       |
| Jurisdiction: <u>City of Riverside</u>                                          |           |            |           | CHK                                        | <u>RV</u> | <u>DATE</u>                         | <u>05/23/19</u>  |
| Major Street: <u>Barton Street</u>                                              |           |            |           |                                            |           | Critical Approach Speed (Major)     | <u>55 mph</u>    |
| Minor Street: <u>Driveway 1</u>                                                 |           |            |           |                                            |           | Critical Approach Speed (Minor)     | <u>25 mph</u>    |
| Major Street Approach Lanes = <u>1</u> lane                                     |           |            |           | Minor Street Approach Lanes: <u>1</u> lane |           |                                     |                  |
| Major Street Future ADT = <u>418</u> vpd                                        |           |            |           | Minor Street Future ADT = <u>418</u> vpd   |           |                                     |                  |
| Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... |           |            |           |                                            |           | <input checked="" type="checkbox"/> | <b>RURAL (R)</b> |
|                                                                                 |           |            |           |                                            |           | or                                  |                  |
| In built up area of isolated community of < 10,000 population .....             |           |            |           |                                            |           | <input type="checkbox"/>            |                  |

**(Based on Estimated Average Daily Traffic - See Note)**

| <u>URBAN</u>                                                                        |  | <u>RURAL</u>                                        |           | Minimum Requirements<br>EADT                                      |              |                                                                                       |              |
|-------------------------------------------------------------------------------------|--|-----------------------------------------------------|-----------|-------------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------|--------------|
| <b>CONDITION A - Minimum Vehicular Volume</b>                                       |  | <b>XX</b>                                           |           | Vehicles Per Day on<br>Major Street<br>(Total of Both Approaches) |              | Vehicles Per Day<br>on Higher-Volume<br>Minor Street Approach<br>(One Direction Only) |              |
| <u>Satisfied</u>                                                                    |  | <u>Not Satisfied</u>                                | <b>XX</b> |                                                                   |              |                                                                                       |              |
| Number of lanes for moving traffic on each approach                                 |  | Number of lanes for moving traffic on each approach |           | <u>Urban</u>                                                      | <u>Rural</u> | <u>Urban</u>                                                                          | <u>Rural</u> |
| <u>Major Street</u>                                                                 |  | <u>Minor Street</u>                                 |           |                                                                   |              |                                                                                       |              |
| <u>1 418</u>                                                                        |  | <u>1 418</u>                                        |           | 8,000                                                             | 5,600        | 2,400                                                                                 | 1,680        |
| <u>2 +</u>                                                                          |  | <u>1</u>                                            |           | 9,600                                                             | 6,720        | 2,400                                                                                 | 1,680        |
| <u>2 +</u>                                                                          |  | <u>2 +</u>                                          |           | 9,600                                                             | 6,720        | 3,200                                                                                 | 2,240        |
| <u>1</u>                                                                            |  | <u>2 +</u>                                          |           | 8,000                                                             | 5,600        | 3,200                                                                                 | 2,240        |
| <b>CONDITION B - Interruption of Continuous Traffic</b>                             |  | <b>XX</b>                                           |           | Vehicles Per Day<br>on Major Street<br>(Total of Both Approaches) |              | Vehicles Per Day<br>on Higher-Volume<br>Minor Street Approach<br>(One Direction Only) |              |
| <u>Satisfied</u>                                                                    |  | <u>Not Satisfied</u>                                |           |                                                                   |              |                                                                                       |              |
| Number of lanes for moving traffic on each approach                                 |  | Number of lanes for moving traffic on each approach |           | <u>Urban</u>                                                      | <u>Rural</u> | <u>Urban</u>                                                                          | <u>Rural</u> |
| <u>Major Street</u>                                                                 |  | <u>Minor Street</u>                                 |           |                                                                   |              |                                                                                       |              |
| <u>1 418</u>                                                                        |  | <u>1 418</u>                                        |           | 12,000                                                            | 8,400        | 1,200                                                                                 | 850          |
| <u>2 +</u>                                                                          |  | <u>1</u>                                            |           | 14,400                                                            | 10,080       | 1,200                                                                                 | 850          |
| <u>2 +</u>                                                                          |  | <u>2 +</u>                                          |           | 14,400                                                            | 10,080       | 1,600                                                                                 | 1,120        |
| <u>1</u>                                                                            |  | <u>2 +</u>                                          |           | 12,000                                                            | 8,400        | 1,600                                                                                 | 1,120        |
| <b>Combination of CONDITIONS A + B</b>                                              |  | <b>XX</b>                                           |           | 2 CONDITIONS<br>80%                                               |              | 2 CONDITIONS<br>80%                                                                   |              |
| <u>Satisfied</u>                                                                    |  | <u>Not Satisfied</u>                                |           |                                                                   |              |                                                                                       |              |
| No one condition satisfied, but following conditions<br>fulfilled 80% of more ..... |  |                                                     |           |                                                                   |              |                                                                                       |              |
|                                                                                     |  | <u>A</u>                                            | <u>B</u>  |                                                                   |              |                                                                                       |              |
|                                                                                     |  | <b>7%</b>                                           | <b>5%</b> |                                                                   |              |                                                                                       |              |

**Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.**

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P Conditions - Weekday PM Peak Hour**

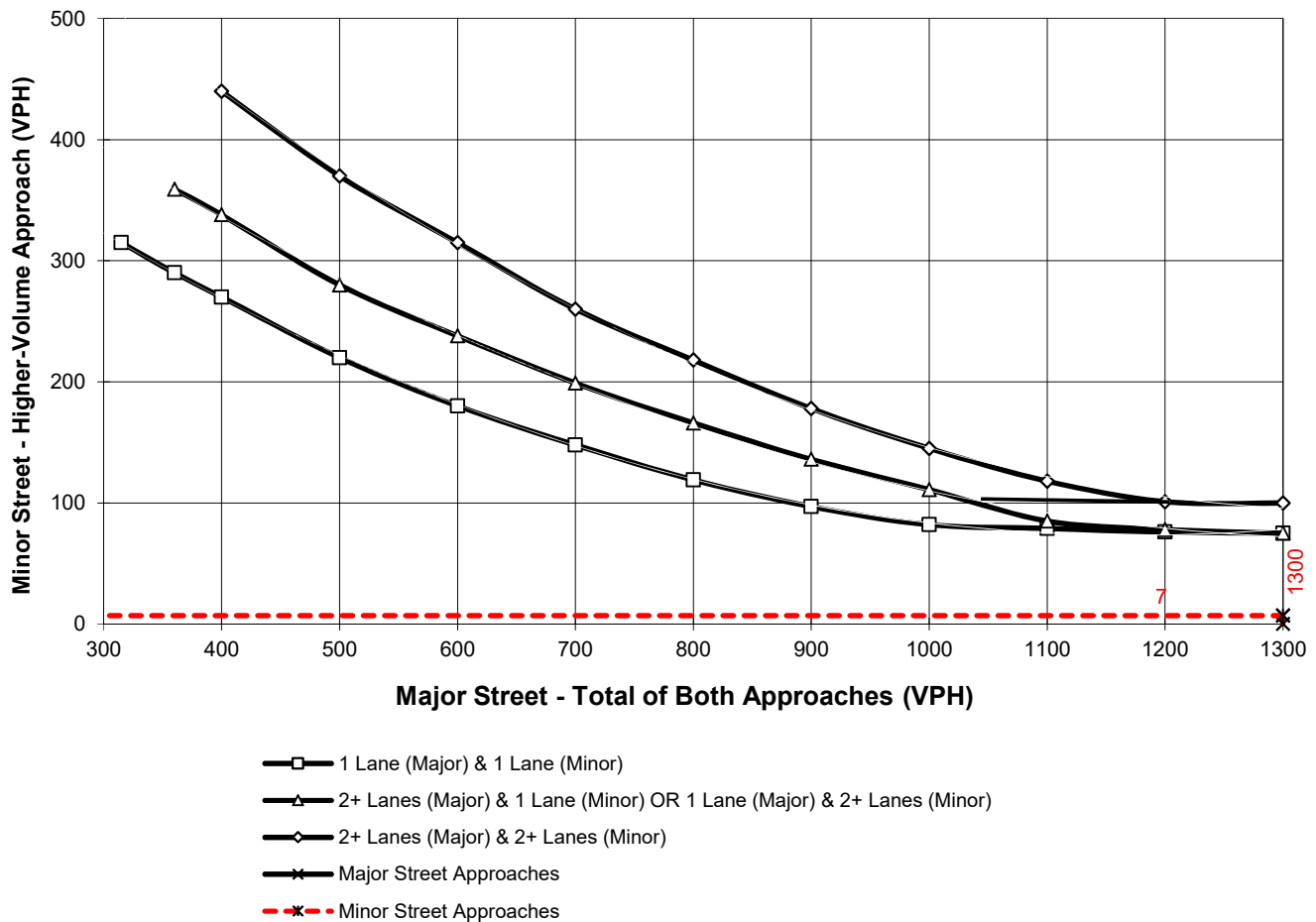
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **4260**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Private Driveway**

High Volume Approach (VPH) = **7**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes  
and 75 vph applies as the lower threshold for a minor-street approach with one lane

### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **E+P Conditions - Weekday PM Peak Hour**

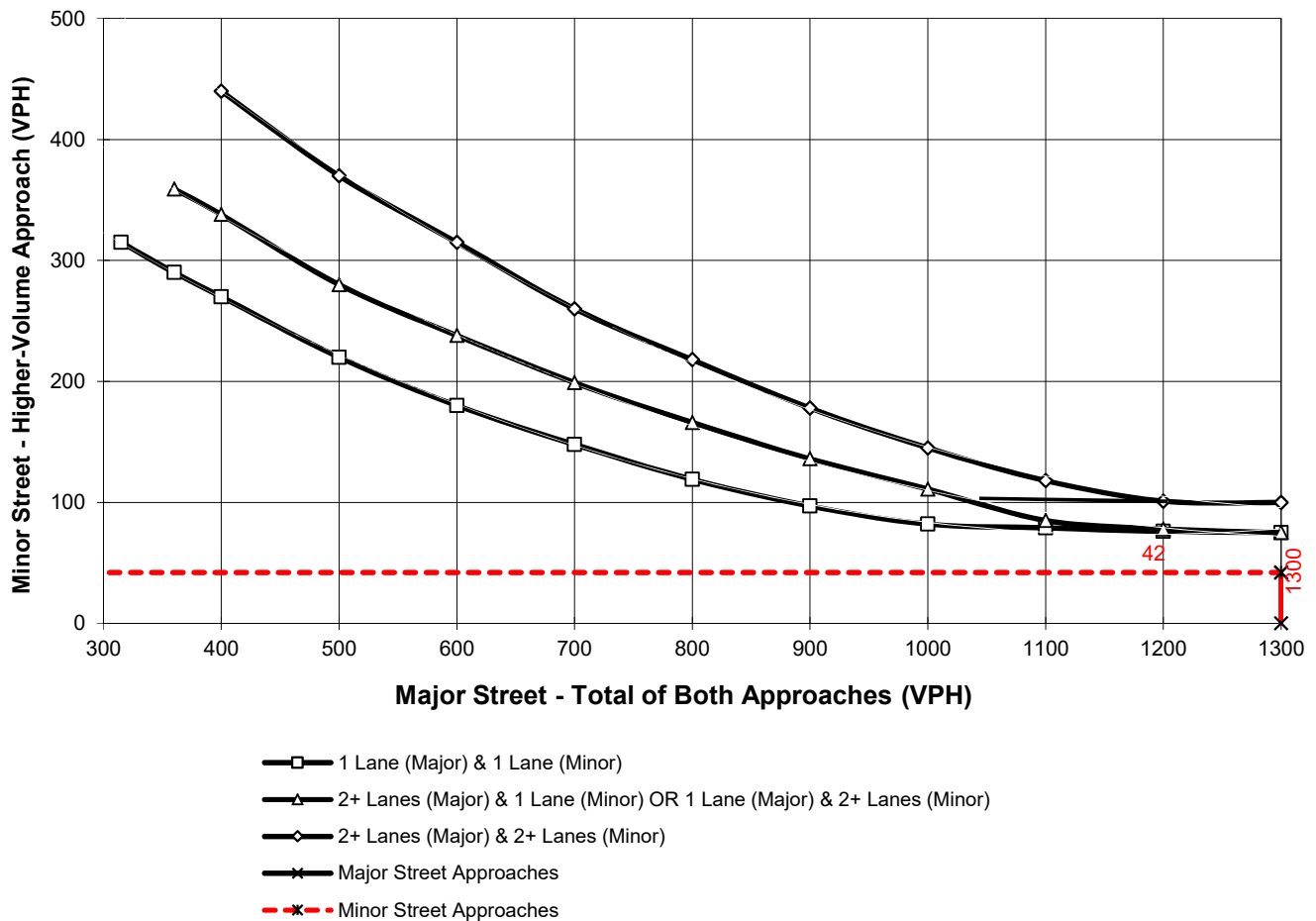
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **4287**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Driveway 2/Vista Grande**

High Volume Approach (VPH) = **42**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes  
and 75 vph applies as the lower threshold for a minor-street approach with one lane

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## **APPENDIX 5.3:**

### **E+P CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS**

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## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 1082 | 2717 | 194  | 185  | 184  |
| v/c Ratio               | 0.30 | 0.75 | 0.68 | 0.68 | 0.66 |
| Control Delay           | 3.6  | 3.8  | 44.8 | 39.6 | 38.3 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 3.6  | 3.8  | 44.8 | 39.6 | 38.3 |
| Queue Length 50th (ft)  | 47   | 147  | 101  | 83   | 78   |
| Queue Length 95th (ft)  | 67   | 109  | 170  | 156  | 147  |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3567 | 3639 | 343  | 320  | 328  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.30 | 0.75 | 0.57 | 0.58 | 0.56 |
| Intersection Summary    |      |      |      |      |      |

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 72   | 910  | 1618 | 143  | 496  | 499  | 200  |
| v/c Ratio               | 0.63 | 0.34 | 0.75 | 0.19 | 0.79 | 0.75 | 0.32 |
| Control Delay           | 59.6 | 14.0 | 24.2 | 3.8  | 35.4 | 27.2 | 11.1 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 59.6 | 14.0 | 24.2 | 3.8  | 35.4 | 27.2 | 11.1 |
| Queue Length 50th (ft)  | 36   | 122  | 272  | 0    | 245  | 202  | 36   |
| Queue Length 95th (ft)  | #83  | 150  | 331  | 34   | #412 | #339 | 88   |
| Internal Link Dist (ft) |      | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200  |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 116  | 2654 | 2166 | 742  | 625  | 662  | 624  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.62 | 0.34 | 0.75 | 0.19 | 0.79 | 0.75 | 0.32 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 2141 | 1569 | 207  | 208  | 208  |
| v/c Ratio               | 0.62 | 0.45 | 0.64 | 0.65 | 0.64 |
| Control Delay           | 8.2  | 6.9  | 40.1 | 33.3 | 32.3 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 8.2  | 6.9  | 40.1 | 33.3 | 32.3 |
| Queue Length 50th (ft)  | 180  | 116  | 108  | 85   | 82   |
| Queue Length 95th (ft)  | 279  | 182  | 167  | 151  | 144  |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3477 | 3521 | 443  | 417  | 428  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.62 | 0.45 | 0.47 | 0.50 | 0.49 |
| Intersection Summary    |      |      |      |      |      |

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 236  | 1602 | 1007 | 219  | 342  | 345  | 290  |
| v/c Ratio               | 0.75 | 0.54 | 0.56 | 0.32 | 0.64 | 0.67 | 0.54 |
| Control Delay           | 50.4 | 12.8 | 25.8 | 4.7  | 32.8 | 33.8 | 21.9 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 50.4 | 12.8 | 25.8 | 4.7  | 32.8 | 33.8 | 21.9 |
| Queue Length 50th (ft)  | 126  | 191  | 169  | 0    | 173  | 181  | 97   |
| Queue Length 95th (ft)  | 200  | 231  | 221  | 49   | 272  | 287  | 183  |
| Internal Link Dist (ft) |      | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200  |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 373  | 2955 | 1795 | 690  | 536  | 515  | 538  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.63 | 0.54 | 0.56 | 0.32 | 0.64 | 0.67 | 0.54 |
| Intersection Summary    |      |      |      |      |      |      |      |

**APPENDIX 5.4:**

**E+P CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS WITH  
IMPROVEMENTS**

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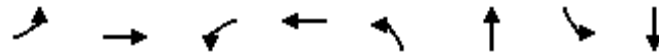
| Intersection               |        |                        |      |        |                            |       |        |      |                                |        |      |      |
|----------------------------|--------|------------------------|------|--------|----------------------------|-------|--------|------|--------------------------------|--------|------|------|
| Int Delay, s/veh           | 0      |                        |      |        |                            |       |        |      |                                |        |      |      |
| Movement                   | EBL    | EBT                    | EBR  | WBL    | WBT                        | WBR   | NBL    | NBT  | NBR                            | SBL    | SBT  | SBR  |
| Lane Configurations        | ↑↑↑    |                        |      | ↑↑↑    |                            |       | ↗      |      |                                | ↗      |      |      |
| Traffic Vol, veh/h         | 0      | 1226                   | 7    | 0      | 2511                       | 0     | 0      | 0    | 6                              | 0      | 0    | 0    |
| Future Vol, veh/h          | 0      | 1226                   | 7    | 0      | 2511                       | 0     | 0      | 0    | 6                              | 0      | 0    | 0    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0    | 0      | 0                          | 0     | 0      | 0    | 0                              | 0      | 0    | 0    |
| Sign Control               | Free   | Free                   | Free | Free   | Free                       | Free  | Stop   | Stop | Stop                           | Stop   | Stop | Stop |
| RT Channelized             | -      | -                      | None | -      | -                          | None  | -      | -    | None                           | -      | -    | None |
| Storage Length             | -      | -                      | -    | -      | -                          | -     | -      | -    | 0                              | -      | -    | 0    |
| Veh in Median Storage, #   | -      | 0                      | -    | -      | 0                          | -     | -      | 0    | -                              | -      | 0    | -    |
| Grade, %                   | -      | 0                      | -    | -      | 0                          | -     | -      | 0    | -                              | -      | 0    | -    |
| Peak Hour Factor           | 92     | 92                     | 92   | 92     | 92                         | 92    | 92     | 92   | 92                             | 92     | 92   | 92   |
| Heavy Vehicles, %          | 0      | 0                      | 0    | 0      | 0                          | 0     | 0      | 0    | 0                              | 0      | 0    | 0    |
| Mvmt Flow                  | 0      | 1333                   | 8    | 0      | 2729                       | 0     | 0      | 0    | 7                              | 0      | 0    | 0    |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Major/Minor                | Major1 |                        |      | Major2 |                            |       | Minor1 |      |                                | Minor2 |      |      |
| Conflicting Flow All       | -      | 0                      | 0    | -      | -                          | 0     | -      | -    | 671                            | -      | -    | 1365 |
| Stage 1                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 2                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Critical Hdwy              | -      | -                      | -    | -      | -                          | -     | -      | -    | 7.1                            | -      | -    | 7.1  |
| Critical Hdwy Stg 1        | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Critical Hdwy Stg 2        | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Follow-up Hdwy             | -      | -                      | -    | -      | -                          | -     | -      | -    | 3.9                            | -      | -    | 3.9  |
| Pot Cap-1 Maneuver         | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | *639                           | 0      | 0    | *337 |
| Stage 1                    | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | -                              | 0      | 0    | -    |
| Stage 2                    | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | -                              | 0      | 0    | -    |
| Platoon blocked, %         | -      | -                      | -    | -      | -                          | -     | -      | -    | 1                              | -      | -    | 1    |
| Mov Cap-1 Maneuver         | -      | -                      | -    | -      | -                          | -     | -      | -    | *639                           | -      | -    | *337 |
| Mov Cap-2 Maneuver         | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 1                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 2                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Approach                   | EB     |                        |      | WB     |                            |       | NB     |      |                                | SB     |      |      |
| HCM Control Delay, s       | 0      |                        |      | 0      |                            |       | 10.7   |      |                                | 0      |      |      |
| HCM LOS                    |        |                        |      |        |                            |       | B      |      |                                | A      |      |      |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Minor Lane/Major Mvmt      | NBLn1  | EBT                    | EBR  | WBT    | WBR                        | SBLn1 |        |      |                                |        |      |      |
| Capacity (veh/h)           | 639    | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| HCM Lane V/C Ratio         | 0.01   | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| HCM Control Delay (s)      | 10.7   | -                      | -    | -      | -                          | 0     |        |      |                                |        |      |      |
| HCM Lane LOS               | B      | -                      | -    | -      | -                          | A     |        |      |                                |        |      |      |
| HCM 95th %tile Q(veh)      | 0      | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| Notes                      |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |      |        | +: Computation Not Defined |       |        |      | *: All major volume in platoon |        |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/10/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 4    | 1221  | 12   | 2508  | 3     | 0     | 11    | 0     |
| Future Volume (vph)  | 4    | 1221  | 12   | 2508  | 3     | 0     | 11    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.2  | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 9.6  | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 8.0% | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 3.2  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.2  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag  | Lag   | Lead | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

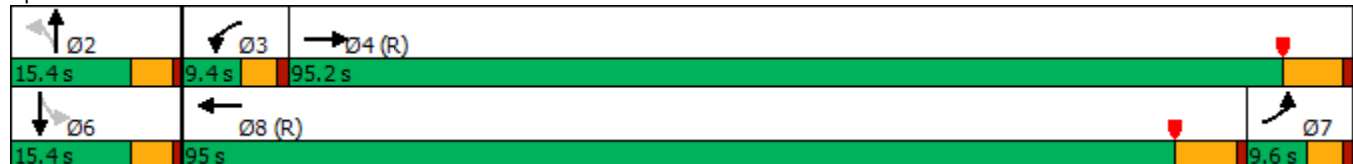
Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/10/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 1221                                                                              | 7                                                                                 | 12                                                                                | 2508                                                                              | 35                                                                                | 3                                                                                  | 0                                                                                   | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1221                                                                              | 7                                                                                 | 12                                                                                | 2508                                                                              | 35                                                                                | 3                                                                                  | 0                                                                                   | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 1327                                                                              | 8                                                                                 | 13                                                                                | 2726                                                                              | 38                                                                                | 3                                                                                  | 0                                                                                   | 15                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 112                                                                               | 4278                                                                              | 26                                                                                | 27                                                                                | 3888                                                                              | 54                                                                                | 42                                                                                 | 7                                                                                   | 72                                                                                  | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| Arrive On Green              | 0.12                                                                              | 1.00                                                                              | 1.00                                                                              | 0.01                                                                              | 0.74                                                                              | 0.74                                                                              | 0.05                                                                               | 0.00                                                                                | 0.05                                                                                | 0.05                                                                                | 0.00                                                                                | 0.05                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5320                                                                              | 32                                                                                | 1810                                                                              | 5272                                                                              | 73                                                                                | 130                                                                                | 139                                                                                 | 1347                                                                                | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 863                                                                               | 472                                                                               | 13                                                                                | 1785                                                                              | 979                                                                               | 18                                                                                 | 0                                                                                   | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1894                                                                              | 1810                                                                              | 1729                                                                              | 1887                                                                              | 1616                                                                               | 0                                                                                   | 0                                                                                   | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                               | 33.6                                                                              | 34.0                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                               | 33.6                                                                              | 34.0                                                                              | 1.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.02                                                                              | 1.00                                                                              |                                                                                   | 0.04                                                                              | 0.17                                                                               |                                                                                     | 0.83                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 112                                                                               | 2781                                                                              | 1523                                                                              | 27                                                                                | 2550                                                                              | 1392                                                                              | 122                                                                                | 0                                                                                   | 0                                                                                   | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| V/C Ratio(X)                 | 0.04                                                                              | 0.31                                                                              | 0.31                                                                              | 0.49                                                                              | 0.70                                                                              | 0.70                                                                              | 0.15                                                                               | 0.00                                                                                | 0.00                                                                                | 0.09                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 112                                                                               | 2781                                                                              | 1523                                                                              | 78                                                                                | 2550                                                                              | 1392                                                                              | 179                                                                                | 0                                                                                   | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.48                                                                              | 0.48                                                                              | 0.48                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 49.4                                                                              | 0.0                                                                               | 0.0                                                                               | 58.7                                                                              | 8.5                                                                               | 8.6                                                                               | 54.3                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.1                                                                                | 0.0                                                                                 | 53.8                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.3                                                                               | 0.5                                                                               | 2.5                                                                               | 0.8                                                                               | 1.5                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.1                                                                               | 0.2                                                                               | 0.4                                                                               | 9.0                                                                               | 10.2                                                                              | 0.5                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 49.4                                                                              | 0.3                                                                               | 0.5                                                                               | 61.2                                                                              | 9.3                                                                               | 10.1                                                                              | 54.9                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.3                                                                                | 0.0                                                                                 | 53.8                                                                                |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | B                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 1339                                                                              |                                                                                   |                                                                                   | 2777                                                                              |                                                                                   |                                                                                   | 18                                                                                 |                                                                                     |                                                                                     | 13                                                                                  |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.5                                                                               |                                                                                   |                                                                                   | 9.8                                                                               |                                                                                   |                                                                                   | 54.9                                                                               |                                                                                     |                                                                                     | 54.3                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | D                                                                                  |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              |                                                                                   | 6.0                                                                               | 103.0                                                                             |                                                                                   | 11.0                                                                              |                                                                                    | 14.0                                                                                | 95.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | * 4.2                                                                             | 6.5                                                                               |                                                                                   | 4.6                                                                               |                                                                                    | 6.5                                                                                 | * 6.5                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.8                                                                              |                                                                                   | * 5.2                                                                             | 88.7                                                                              |                                                                                   | 10.8                                                                              |                                                                                    | 5.4                                                                                 | * 89                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.3                                                                               |                                                                                   | 2.9                                                                               | 2.0                                                                               |                                                                                   | 2.8                                                                               |                                                                                    | 2.2                                                                                 | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 10.3                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 35.9                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 7.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

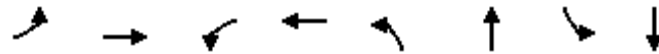
| Intersection                                                                                                         |        |      |      |        |      |       |        |      |      |        |      |      |
|----------------------------------------------------------------------------------------------------------------------|--------|------|------|--------|------|-------|--------|------|------|--------|------|------|
| Int Delay, s/veh                                                                                                     | 0      |      |      |        |      |       |        |      |      |        |      |      |
| Movement                                                                                                             | EBL    | EBT  | EBR  | WBL    | WBT  | WBR   | NBL    | NBT  | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations                                                                                                  | ↑↑↑    |      |      | ↑↑↑    |      |       | ↗      |      |      | ↗      |      |      |
| Traffic Vol, veh/h                                                                                                   | 0      | 2314 | 4    | 0      | 1947 | 0     | 0      | 0    | 7    | 0      | 0    | 0    |
| Future Vol, veh/h                                                                                                    | 0      | 2314 | 4    | 0      | 1947 | 0     | 0      | 0    | 7    | 0      | 0    | 0    |
| Conflicting Peds, #/hr                                                                                               | 0      | 0    | 0    | 0      | 0    | 0     | 0      | 0    | 0    | 0      | 0    | 0    |
| Sign Control                                                                                                         | Free   | Free | Free | Free   | Free | Free  | Stop   | Stop | Stop | Stop   | Stop | Stop |
| RT Channelized                                                                                                       | -      | -    | None | -      | -    | None  | -      | -    | None | -      | -    | None |
| Storage Length                                                                                                       | -      | -    | -    | -      | -    | -     | -      | -    | 0    | -      | -    | 0    |
| Veh in Median Storage, #                                                                                             | -      | 0    | -    | -      | 0    | -     | -      | 0    | -    | -      | 0    | -    |
| Grade, %                                                                                                             | -      | 0    | -    | -      | 0    | -     | -      | 0    | -    | -      | 0    | -    |
| Peak Hour Factor                                                                                                     | 92     | 92   | 92   | 92     | 92   | 92    | 92     | 92   | 92   | 92     | 92   | 92   |
| Heavy Vehicles, %                                                                                                    | 0      | 0    | 0    | 0      | 0    | 0     | 0      | 0    | 0    | 0      | 0    | 0    |
| Mvmt Flow                                                                                                            | 0      | 2515 | 4    | 0      | 2116 | 0     | 0      | 0    | 8    | 0      | 0    | 0    |
|                                                                                                                      |        |      |      |        |      |       |        |      |      |        |      |      |
| Major/Minor                                                                                                          | Major1 |      |      | Major2 |      |       | Minor1 |      |      | Minor2 |      |      |
| Conflicting Flow All                                                                                                 | -      | 0    | 0    | -      | -    | 0     | -      | -    | 1260 | -      | -    | 1058 |
| Stage 1                                                                                                              | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -    | -    |
| Stage 2                                                                                                              | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -    | -    |
| Critical Hdwy                                                                                                        | -      | -    | -    | -      | -    | -     | -      | -    | 7.1  | -      | -    | 7.1  |
| Critical Hdwy Stg 1                                                                                                  | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -    | -    |
| Critical Hdwy Stg 2                                                                                                  | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -    | -    |
| Follow-up Hdwy                                                                                                       | -      | -    | -    | -      | -    | -     | -      | -    | 3.9  | -      | -    | 3.9  |
| Pot Cap-1 Maneuver                                                                                                   | 0      | -    | -    | 0      | -    | -     | 0      | 0    | *380 | 0      | 0    | *467 |
| Stage 1                                                                                                              | 0      | -    | -    | 0      | -    | -     | 0      | 0    | -    | 0      | 0    | -    |
| Stage 2                                                                                                              | 0      | -    | -    | 0      | -    | -     | 0      | 0    | -    | 0      | 0    | -    |
| Platoon blocked, %                                                                                                   | -      | -    | -    | -      | -    | -     | -      | -    | 1    | -      | -    | 1    |
| Mov Cap-1 Maneuver                                                                                                   | -      | -    | -    | -      | -    | -     | -      | -    | *380 | -      | -    | *467 |
| Mov Cap-2 Maneuver                                                                                                   | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -    | -    |
| Stage 1                                                                                                              | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -    | -    |
| Stage 2                                                                                                              | -      | -    | -    | -      | -    | -     | -      | -    | -    | -      | -    | -    |
|                                                                                                                      |        |      |      |        |      |       |        |      |      |        |      |      |
| Approach                                                                                                             | EB     |      |      | WB     |      |       | NB     |      |      | SB     |      |      |
| HCM Control Delay, s                                                                                                 | 0      |      |      | 0      |      |       | 14.7   |      |      | 0      |      |      |
| HCM LOS                                                                                                              |        |      |      |        |      |       | B      |      |      | A      |      |      |
|                                                                                                                      |        |      |      |        |      |       |        |      |      |        |      |      |
| Minor Lane/Major Mvmt                                                                                                | NBLn1  | EBT  | EBR  | WBT    | WBR  | SBLn1 |        |      |      |        |      |      |
| Capacity (veh/h)                                                                                                     | 380    | -    | -    | -      | -    | -     |        |      |      |        |      |      |
| HCM Lane V/C Ratio                                                                                                   | 0.02   | -    | -    | -      | -    | -     |        |      |      |        |      |      |
| HCM Control Delay (s)                                                                                                | 14.7   | -    | -    | -      | -    | 0     |        |      |      |        |      |      |
| HCM Lane LOS                                                                                                         | B      | -    | -    | -      | -    | A     |        |      |      |        |      |      |
| HCM 95th %tile Q(veh)                                                                                                | 0.1    | -    | -    | -      | -    | -     |        |      |      |        |      |      |
| Notes                                                                                                                |        |      |      |        |      |       |        |      |      |        |      |      |
| ~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    *: All major volume in platoon |        |      |      |        |      |       |        |      |      |        |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/10/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↰    | ↑↑↑   | ↰    | ↑↑↑   |       | ↕     | ↰     | ↰     |
| Traffic Volume (vph) | 2    | 2309  | 23   | 1935  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2    | 2309  | 23   | 1935  | 2     | 0     | 37    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.6  | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 9.8  | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 8.2% | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.6  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lead | Lead  | Lag  | Lag   |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

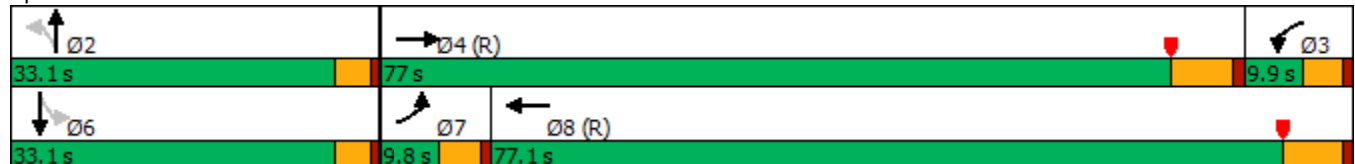
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/10/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 2                                                                                 | 2309                                                                              | 12                                                                                | 23                                                                                | 1935                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 9                                                                                   | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)        | 2                                                                                 | 2309                                                                              | 12                                                                                | 23                                                                                | 1935                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 9                                                                                   | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 2                                                                                 | 2510                                                                              | 13                                                                                | 25                                                                                | 2103                                                                              | 17                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 5                                                                                 | 3129                                                                              | 16                                                                                | 336                                                                               | 4174                                                                              | 34                                                                                | 44                                                                                 | 14                                                                                  | 113                                                                                 | 181                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green              | 0.01                                                                              | 1.00                                                                              | 1.00                                                                              | 0.19                                                                              | 0.79                                                                              | 0.79                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5325                                                                              | 28                                                                                | 1810                                                                              | 5307                                                                              | 43                                                                                | 106                                                                                | 165                                                                                 | 1352                                                                                | 1427                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 2                                                                                 | 1629                                                                              | 894                                                                               | 25                                                                                | 1370                                                                              | 750                                                                               | 12                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1895                                                                              | 1810                                                                              | 1729                                                                              | 1892                                                                              | 1622                                                                               | 0                                                                                   | 0                                                                                   | 1427                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 1.4                                                                               | 16.8                                                                              | 16.8                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 1.4                                                                               | 16.8                                                                              | 16.8                                                                              | 0.8                                                                                | 0.0                                                                                 | 0.0                                                                                 | 3.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.17                                                                               |                                                                                     | 0.83                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 5                                                                                 | 2032                                                                              | 1113                                                                              | 336                                                                               | 2720                                                                              | 1488                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 181                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                 | 0.41                                                                              | 0.80                                                                              | 0.80                                                                              | 0.07                                                                              | 0.50                                                                              | 0.50                                                                              | 0.07                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 78                                                                                | 2032                                                                              | 1113                                                                              | 336                                                                               | 2720                                                                              | 1488                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.74                                                                              | 0.74                                                                              | 0.74                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.6                                                                              | 0.0                                                                               | 0.0                                                                               | 40.3                                                                              | 4.5                                                                               | 4.5                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh       | 19.3                                                                              | 3.5                                                                               | 6.2                                                                               | 0.0                                                                               | 0.5                                                                               | 0.9                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 1.0                                                                               | 1.9                                                                               | 0.6                                                                               | 3.7                                                                               | 4.3                                                                               | 0.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 78.9                                                                              | 3.5                                                                               | 6.2                                                                               | 40.4                                                                              | 5.0                                                                               | 5.4                                                                               | 51.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                    | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2525                                                                              |                                                                                   |                                                                                   |                                                                                   | 2145                                                                              |                                                                                   | 12                                                                                 |                                                                                     |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 4.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 5.6                                                                               |                                                                                   | 51.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 52.1                                                                                |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   | D                                                                                  |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                  |                                                                                     | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.2                                                                              |                                                                                   | 28.8                                                                              |                                                                                   | 77.0                                                                              |                                                                                   | 14.2                                                                               |                                                                                     | 4.9                                                                                 |                                                                                     | 100.9                                                                               |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             |                                                                                   | 6.5                                                                               |                                                                                   | * 6.5                                                                             |                                                                                   | * 4.2                                                                              |                                                                                     | 4.6                                                                                 |                                                                                     | 6.5                                                                                 |                                                                                     |
| Max Green Setting (Gmax), s  | * 29                                                                              |                                                                                   | 5.3                                                                               |                                                                                   | * 71                                                                              |                                                                                   | * 29                                                                               |                                                                                     | 5.2                                                                                 |                                                                                     | 70.6                                                                                |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.8                                                                               |                                                                                   | 3.4                                                                               |                                                                                   | 2.0                                                                               |                                                                                   | 5.0                                                                                |                                                                                     | 2.1                                                                                 |                                                                                     | 18.8                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 35.6                                                                              |                                                                                   | 0.1                                                                                |                                                                                     | 0.0                                                                                 |                                                                                     | 22.6                                                                                |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 5.5                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## **APPENDIX 6.1:**

### **OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/23/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 10                                                                                | 1557                                                                              | 60                                                                                | 2804                                                                              | 3                                                                                 | 68                                                                                | 5                                                                                   | 55                                                                                  | 7                                                                                   | 8                                                                                   | 3                                                                                   |
| Future Volume (vph)  | 10                                                                                | 1557                                                                              | 60                                                                                | 2804                                                                              | 3                                                                                 | 68                                                                                | 5                                                                                   | 55                                                                                  | 7                                                                                   | 8                                                                                   | 3                                                                                   |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 68.4                                                                              | 11.0                                                                              | 70.2                                                                              | 70.2                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                |
| Total Split (%)      | 7.7%                                                                              | 57.0%                                                                             | 9.2%                                                                              | 58.5%                                                                             | 58.5%                                                                             | 33.8%                                                                             | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

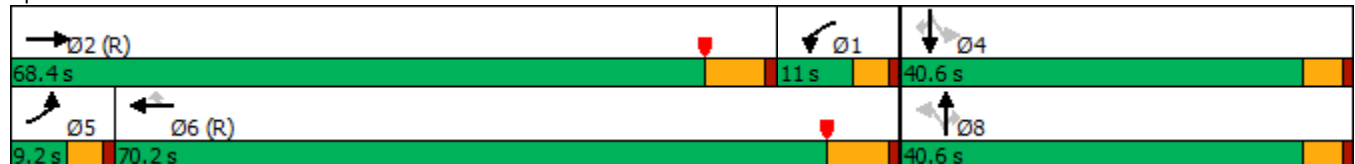
Actuated Cycle Length: 120

Offset: 88 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 2: Barton St. & Alessandro Bl. 05/23/2019

|                              |  |                                                                                                                                                                            |  |  |                                                                                                                                                                            |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                         | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                         | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  | <br><br> |                                                                                   |  | <br><br> |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 10                                                                                | 1557                                                                                                                                                                                                                                                        | 28                                                                                | 60                                                                                | 2804                                                                                                                                                                                                                                                        | 3                                                                                 | 68                                                                                 | 5                                                                                   | 55                                                                                  | 7                                                                                   | 8                                                                                   | 3                                                                                   |
| Future Volume (veh/h)        | 10                                                                                | 1557                                                                                                                                                                                                                                                        | 28                                                                                | 60                                                                                | 2804                                                                                                                                                                                                                                                        | 3                                                                                 | 68                                                                                 | 5                                                                                   | 55                                                                                  | 7                                                                                   | 8                                                                                   | 3                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.99                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 11                                                                                | 1674                                                                                                                                                                                                                                                        | 30                                                                                | 65                                                                                | 3015                                                                                                                                                                                                                                                        | 3                                                                                 | 73                                                                                 | 5                                                                                   | 28                                                                                  | 8                                                                                   | 9                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                        | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                        | 0.93                                                                              | 0.93                                                                               | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 23                                                                                | 2707                                                                                                                                                                                                                                                        | 48                                                                                | 538                                                                               | 4252                                                                                                                                                                                                                                                        | 1320                                                                              | 474                                                                                | 31                                                                                  | 477                                                                                 | 250                                                                                 | 267                                                                                 | 483                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.52                                                                                                                                                                                                                                                        | 0.52                                                                              | 0.10                                                                              | 0.27                                                                                                                                                                                                                                                        | 0.27                                                                              | 0.30                                                                               | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5247                                                                                                                                                                                                                                                        | 94                                                                                | 1810                                                                              | 5187                                                                                                                                                                                                                                                        | 1610                                                                              | 1388                                                                               | 102                                                                                 | 1590                                                                                | 685                                                                                 | 889                                                                                 | 1610                                                                                |
| Grp Volume(v), veh/h         | 11                                                                                | 1103                                                                                                                                                                                                                                                        | 601                                                                               | 65                                                                                | 3015                                                                                                                                                                                                                                                        | 3                                                                                 | 78                                                                                 | 0                                                                                   | 28                                                                                  | 17                                                                                  | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 1883                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 1610                                                                              | 1490                                                                               | 0                                                                                   | 1590                                                                                | 1574                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.7                                                                               | 27.2                                                                                                                                                                                                                                                        | 27.2                                                                              | 3.9                                                                               | 63.0                                                                                                                                                                                                                                                        | 0.2                                                                               | 0.0                                                                                | 0.0                                                                                 | 1.5                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.7                                                                               | 27.2                                                                                                                                                                                                                                                        | 27.2                                                                              | 3.9                                                                               | 63.0                                                                                                                                                                                                                                                        | 0.2                                                                               | 3.8                                                                                | 0.0                                                                                 | 1.5                                                                                 | 3.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.05                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 0.94                                                                               |                                                                                     | 1.00                                                                                | 0.47                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 23                                                                                | 1784                                                                                                                                                                                                                                                        | 971                                                                               | 538                                                                               | 4252                                                                                                                                                                                                                                                        | 1320                                                                              | 505                                                                                | 0                                                                                   | 477                                                                                 | 516                                                                                 | 0                                                                                   | 483                                                                                 |
| V/C Ratio(X)                 | 0.48                                                                              | 0.62                                                                                                                                                                                                                                                        | 0.62                                                                              | 0.12                                                                              | 0.71                                                                                                                                                                                                                                                        | 0.00                                                                              | 0.15                                                                               | 0.00                                                                                | 0.06                                                                                | 0.03                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 1784                                                                                                                                                                                                                                                        | 971                                                                               | 538                                                                               | 4252                                                                                                                                                                                                                                                        | 1320                                                                              | 505                                                                                | 0                                                                                   | 477                                                                                 | 516                                                                                 | 0                                                                                   | 483                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                        | 0.33                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 0.74                                                                              | 0.74                                                                                                                                                                                                                                                        | 0.74                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.8                                                                              | 20.7                                                                                                                                                                                                                                                        | 20.7                                                                              | 39.8                                                                              | 30.9                                                                                                                                                                                                                                                        | 8.0                                                                               | 30.7                                                                               | 0.0                                                                                 | 29.9                                                                                | 29.7                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 5.5                                                                               | 1.6                                                                                                                                                                                                                                                         | 3.0                                                                               | 0.0                                                                               | 0.8                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.2                                                                                 | 0.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.4                                                                               | 10.2                                                                                                                                                                                                                                                        | 11.5                                                                              | 1.7                                                                               | 29.0                                                                                                                                                                                                                                                        | 0.0                                                                               | 1.8                                                                                | 0.0                                                                                 | 0.6                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 64.4                                                                              | 22.3                                                                                                                                                                                                                                                        | 23.6                                                                              | 39.8                                                                              | 31.6                                                                                                                                                                                                                                                        | 8.0                                                                               | 31.4                                                                               | 0.0                                                                                 | 30.2                                                                                | 29.8                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | C                                                                                                                                                                                                                                                           | C                                                                                 | D                                                                                 | C                                                                                                                                                                                                                                                           | A                                                                                 | C                                                                                  | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1715                                                                              |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   | 3083                                                                                                                                                                                                                                                        |                                                                                   |                                                                                    |                                                                                     | 106                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 23.0                                                                              |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   | 31.8                                                                                                                                                                                                                                                        |                                                                                   |                                                                                    |                                                                                     | 31.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | C                                                                                 |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   | C                                                                                                                                                                                                                                                           |                                                                                   |                                                                                    |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                           |                                                                                   | 4                                                                                 | 5                                                                                                                                                                                                                                                           | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 43.0                                                                              | 68.4                                                                                                                                                                                                                                                        |                                                                                   | 40.6                                                                              | 5.7                                                                                                                                                                                                                                                         | 105.6                                                                             |                                                                                    | 40.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 6.5                                                                               | * 6.5                                                                                                                                                                                                                                                       |                                                                                   | 4.6                                                                               | * 4.2                                                                                                                                                                                                                                                       | 6.5                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.8                                                                               | * 62                                                                                                                                                                                                                                                        |                                                                                   | 36.0                                                                              | * 5                                                                                                                                                                                                                                                         | 63.7                                                                              |                                                                                    | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.9                                                                               | 29.2                                                                                                                                                                                                                                                        |                                                                                   | 5.8                                                                               | 2.7                                                                                                                                                                                                                                                         | 65.0                                                                              |                                                                                    | 5.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 18.9                                                                                                                                                                                                                                                        |                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               |                                                                                    | 0.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 28.7 |
| HCM 6th LOS        | C    |

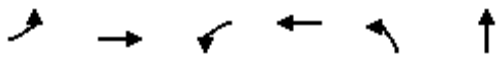
Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/23/2019

|                      |  |                                                                                   |                                                                                   |                                                                                   |       |                                                                                   |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL   | NBT                                                                               | Ø6   |
| Lane Configurations  |  |  |  |  |       |  |      |
| Traffic Volume (vph) | 5                                                                                 | 1594                                                                              | 2                                                                                 | 2834                                                                              | 3     | 0                                                                                 |      |
| Future Volume (vph)  | 5                                                                                 | 1594                                                                              | 2                                                                                 | 2834                                                                              | 3     | 0                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm  | NA                                                                                |      |
| Protected Phases     | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |       | 2                                                                                 | 6    |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2     |                                                                                   |      |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 2     | 2                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |       |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0  | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.2                                                                               | 23.5                                                                              | 9.2                                                                               | 23.5                                                                              | 14.6  | 14.6                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 95.0                                                                              | 10.0                                                                              | 95.0                                                                              | 15.0  | 15.0                                                                              | 15.0 |
| Total Split (%)      | 8.3%                                                                              | 79.2%                                                                             | 8.3%                                                                              | 79.2%                                                                             | 12.5% | 12.5%                                                                             | 13%  |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 3.6   | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0   | 1.0                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |       | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               |       | 4.6                                                                               |      |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               |       |                                                                                   |      |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |       |                                                                                   |      |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | None  | None                                                                              | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 81 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 5                                                                                 | 1594                                                                              | 5                                                                                 | 2                                                                                 | 2834                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1594                                                                              | 5                                                                                 | 2                                                                                 | 2834                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1733                                                                              | 5                                                                                 | 2                                                                                 | 3080                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 3938                                                                              | 11                                                                                | 195                                                                               | 4451                                                                              | 0                                                                                 | 71                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 15                                                                                  | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 1.00                                                                              | 1.00                                                                              | 0.11                                                                              | 0.86                                                                              | 0.00                                                                              | 0.01                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5340                                                                              | 15                                                                                | 1810                                                                              | 5358                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Grp Volume(v), veh/h         | 5                                                                                 | 1122                                                                              | 616                                                                               | 2                                                                                 | 3080                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1897                                                                              | 1810                                                                              | 1729                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.3                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 24.9                                                                              | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.3                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 24.9                                                                              | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                               |                                                                                     | 0.00                                                                                | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 2550                                                                              | 1399                                                                              | 195                                                                               | 4451                                                                              | 0                                                                                 | 71                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 15                                                                                  | 0                                                                                   |
| V/C Ratio(X)                 | 0.43                                                                              | 0.44                                                                              | 0.44                                                                              | 0.01                                                                              | 0.69                                                                              | 0.00                                                                              | 0.04                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 87                                                                                | 2550                                                                              | 1399                                                                              | 195                                                                               | 4451                                                                              | 0                                                                                 | 185                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 165                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 59.0                                                                              | 0.0                                                                               | 0.0                                                                               | 47.8                                                                              | 3.0                                                                               | 0.0                                                                               | 59.2                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 7.1                                                                               | 0.4                                                                               | 0.8                                                                               | 0.0                                                                               | 0.9                                                                               | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 0.2                                                                               | 0.3                                                                               | 0.1                                                                               | 2.3                                                                               | 0.0                                                                               | 0.1                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 66.1                                                                              | 0.4                                                                               | 0.8                                                                               | 47.8                                                                              | 3.9                                                                               | 0.0                                                                               | 59.4                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                  | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1743                                                                              |                                                                                   | 3082                                                                              |                                                                                   |                                                                                   |                                                                                   | 3                                                                                  |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.7                                                                               |                                                                                   | 3.9                                                                               |                                                                                   |                                                                                   |                                                                                   | 59.4                                                                               |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | E                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 5.6                                                                               |                                                                                   | 19.4                                                                              | 95.0                                                                              |                                                                                   | 5.6                                                                               |                                                                                    | 5.0                                                                                 | 109.5                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 6.5                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               |                                                                                    | * 4.2                                                                               | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                   | 5.8                                                                               | * 89                                                                              |                                                                                   | 10.4                                                                              |                                                                                    | * 5.8                                                                               | 88.5                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.2                                                                               |                                                                                   | 2.1                                                                               | 2.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 2.3                                                                                 | 26.9                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 29.1                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 57.1                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 2.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Intersection

Int Delay, s/veh 0.2

| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↑↑↑  |      | ↖    | ↑↑↑  | ↖    | ↖    |
| Traffic Vol, veh/h       | 1590 | 8    | 13   | 2834 | 3    | 15   |
| Future Vol, veh/h        | 1590 | 8    | 13   | 2834 | 3    | 15   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 155  | -    | 0    | 0    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 1728 | 9    | 14   | 3080 | 3    | 16   |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 1737   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 5.3    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 3.1    |
| Pot Cap-1 Maneuver   | -      | -      | 174    |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 174    |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB   |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0  | 0.1 | 44.9 |
| HCM LOS              |    |     | E    |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL   | WBT |
|-----------------------|-------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 25    | 257   | -   | -   | 174   | -   |
| HCM Lane V/C Ratio    | 0.13  | 0.063 | -   | -   | 0.081 | -   |
| HCM Control Delay (s) | 169.5 | 20    | -   | -   | 27.5  | -   |
| HCM Lane LOS          | F     | C     | -   | -   | D     | -   |
| HCM 95th %tile Q(veh) | 0.4   | 0.2   | -   | -   | 0.3   | -   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/23/2019



| Lane Group           | EBL  | EBT   | WBL   | WBT   | WBR   | NBL  | NBR   | SBL  | SBR   |
|----------------------|------|-------|-------|-------|-------|------|-------|------|-------|
| Lane Configurations  |      |       |       |       |       |      |       |      |       |
| Traffic Volume (vph) | 12   | 1575  | 116   | 2981  | 38    | 12   | 45    | 22   | 15    |
| Future Volume (vph)  | 12   | 1575  | 116   | 2981  | 38    | 12   | 45    | 22   | 15    |
| Turn Type            | Prot | NA    | Prot  | NA    | Perm  | Prot | Perm  | Prot | Perm  |
| Protected Phases     | 5    | 2     | 1     | 6     |       | 3    |       | 7    |       |
| Permitted Phases     |      |       |       |       | 6     |      | 8     |      | 4     |
| Detector Phase       | 5    | 2     | 1     | 6     | 6     | 3    | 8     | 7    | 4     |
| Switch Phase         |      |       |       |       |       |      |       |      |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0   | 10.0  | 10.0  | 5.0  | 10.0  | 5.0  | 10.0  |
| Minimum Split (s)    | 9.6  | 16.5  | 9.6   | 30.5  | 30.5  | 9.6  | 26.6  | 9.6  | 14.6  |
| Total Split (s)      | 9.6  | 63.2  | 20.4  | 74.0  | 74.0  | 9.6  | 26.8  | 9.6  | 26.8  |
| Total Split (%)      | 8.0% | 52.7% | 17.0% | 61.7% | 61.7% | 8.0% | 22.3% | 8.0% | 22.3% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6   | 5.5   | 5.5   | 3.6  | 3.6   | 3.6  | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0  | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   |
| Total Lost Time (s)  | 4.6  | 6.5   | 4.6   | 6.5   | 6.5   | 4.6  | 4.6   | 4.6  | 4.6   |
| Lead/Lag             | Lead | Lag   | Lead  | Lag   | Lag   | Lead | Lag   | Lead | Lag   |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes   | Yes   | Yes   | Yes  | Yes   | Yes  | Yes   |
| Recall Mode          | None | C-Max | None  | None  | None  | None | None  | None | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 77.1 (64%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.

|        |        |       |        |
|--------|--------|-------|--------|
|        |        |       |        |
| Ø1     | Ø2 (R) | Ø3    | Ø4     |
| 20.4 s | 63.2 s | 9.6 s | 26.8 s |
|        |        |       |        |
| Ø5     | Ø6     | Ø7    | Ø8     |
| 9.6 s  | 74 s   | 9.6 s | 26.8 s |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/23/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |   |  |  |  |  |  |   |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |   |
| Lane Configurations          |  |    |                                                                                   |  |    |  |  |  |  |  |  |  |   |
| Traffic Volume (veh/h)       | 12                                                                                | 1575                                                                                                                                                                                                                                                  | 32                                                                                | 116                                                                               | 2981                                                                                                                                                                                                                                                  | 38                                                                                | 12                                                                                  | 0                                                                                   | 45                                                                                  | 22                                                                                  | 0                                                                                   | 15                                                                                  |   |
| Future Volume (veh/h)        | 12                                                                                | 1575                                                                                                                                                                                                                                                  | 32                                                                                | 116                                                                               | 2981                                                                                                                                                                                                                                                  | 38                                                                                | 12                                                                                  | 0                                                                                   | 45                                                                                  | 22                                                                                  | 0                                                                                   | 15                                                                                  |   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |   |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |   |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |   |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |   |
| Adj Flow Rate, veh/h         | 13                                                                                | 1712                                                                                                                                                                                                                                                  | 35                                                                                | 126                                                                               | 3240                                                                                                                                                                                                                                                  | 38                                                                                | 13                                                                                  | 0                                                                                   | 49                                                                                  | 24                                                                                  | 0                                                                                   | 0                                                                                   |   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |   |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |   |
| Cap, veh/h                   | 27                                                                                | 3358                                                                                                                                                                                                                                                  | 69                                                                                | 154                                                                               | 3693                                                                                                                                                                                                                                                  | 1146                                                                              | 27                                                                                  | 142                                                                                 | 120                                                                                 | 53                                                                                  | 170                                                                                 |                                                                                     |   |
| Arrive On Green              | 0.01                                                                              | 0.64                                                                                                                                                                                                                                                  | 0.64                                                                              | 0.08                                                                              | 0.71                                                                                                                                                                                                                                                  | 0.71                                                                              | 0.01                                                                                | 0.00                                                                                | 0.07                                                                                | 0.03                                                                                | 0.00                                                                                | 0.00                                                                                |   |
| Sat Flow, veh/h              | 1810                                                                              | 5232                                                                                                                                                                                                                                                  | 107                                                                               | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1609                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |   |
| Grp Volume(v), veh/h         | 13                                                                                | 1131                                                                                                                                                                                                                                                  | 616                                                                               | 126                                                                               | 3240                                                                                                                                                                                                                                                  | 38                                                                                | 13                                                                                  | 0                                                                                   | 49                                                                                  | 24                                                                                  | 0                                                                                   | 0                                                                                   |   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1881                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1609                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |   |
| Q Serve(g_s), s              | 0.9                                                                               | 20.9                                                                                                                                                                                                                                                  | 20.9                                                                              | 8.2                                                                               | 57.5                                                                                                                                                                                                                                                  | 0.8                                                                               | 0.9                                                                                 | 0.0                                                                                 | 3.5                                                                                 | 1.6                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Cycle Q Clear(g_c), s        | 0.9                                                                               | 20.9                                                                                                                                                                                                                                                  | 20.9                                                                              | 8.2                                                                               | 57.5                                                                                                                                                                                                                                                  | 0.8                                                                               | 0.9                                                                                 | 0.0                                                                                 | 3.5                                                                                 | 1.6                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.06                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |   |
| Lane Grp Cap(c), veh/h       | 27                                                                                | 2219                                                                                                                                                                                                                                                  | 1207                                                                              | 154                                                                               | 3693                                                                                                                                                                                                                                                  | 1146                                                                              | 27                                                                                  | 142                                                                                 | 120                                                                                 | 53                                                                                  | 170                                                                                 |                                                                                     |   |
| V/C Ratio(X)                 | 0.49                                                                              | 0.51                                                                                                                                                                                                                                                  | 0.51                                                                              | 0.82                                                                              | 0.88                                                                                                                                                                                                                                                  | 0.03                                                                              | 0.49                                                                                | 0.00                                                                                | 0.41                                                                                | 0.45                                                                                | 0.00                                                                                |                                                                                     |   |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2219                                                                                                                                                                                                                                                  | 1207                                                                              | 238                                                                               | 3693                                                                                                                                                                                                                                                  | 1146                                                                              | 75                                                                                  | 352                                                                                 | 298                                                                                 | 75                                                                                  | 352                                                                                 |                                                                                     |   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |   |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                  | 0.09                                                                              | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |   |
| Uniform Delay (d), s/veh     | 58.7                                                                              | 11.4                                                                                                                                                                                                                                                  | 11.4                                                                              | 54.0                                                                              | 13.3                                                                                                                                                                                                                                                  | 5.1                                                                               | 58.7                                                                                | 0.0                                                                                 | 53.0                                                                                | 57.3                                                                                | 0.0                                                                                 | 0.0                                                                                 |   |
| Incr Delay (d2), s/veh       | 5.1                                                                               | 0.8                                                                                                                                                                                                                                                   | 1.5                                                                               | 1.2                                                                               | 0.3                                                                                                                                                                                                                                                   | 0.0                                                                               | 13.3                                                                                | 0.0                                                                                 | 2.2                                                                                 | 5.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| %ile BackOfQ(50%),veh/ln     | 0.4                                                                               | 6.9                                                                                                                                                                                                                                                   | 7.8                                                                               | 3.6                                                                               | 16.2                                                                                                                                                                                                                                                  | 0.3                                                                               | 0.5                                                                                 | 0.0                                                                                 | 1.5                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| LnGrp Delay(d),s/veh         | 63.8                                                                              | 12.3                                                                                                                                                                                                                                                  | 13.0                                                                              | 55.2                                                                              | 13.5                                                                                                                                                                                                                                                  | 5.1                                                                               | 72.0                                                                                | 0.0                                                                                 | 55.2                                                                                | 63.1                                                                                | 0.0                                                                                 | 0.0                                                                                 |   |
| LnGrp LOS                    | E                                                                                 | B                                                                                                                                                                                                                                                     | B                                                                                 | E                                                                                 | B                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                   | A                                                                                   | E                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |   |
| Approach Vol, veh/h          | 1760                                                                              |                                                                                                                                                                                                                                                       | 3404                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 62                                                                                  |                                                                                     | 24                                                                                  |                                                                                     |                                                                                     |                                                                                     | A |
| Approach Delay, s/veh        | 12.9                                                                              |                                                                                                                                                                                                                                                       | 15.0                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 58.7                                                                                |                                                                                     | 63.1                                                                                |                                                                                     |                                                                                     |                                                                                     |   |
| Approach LOS                 | B                                                                                 |                                                                                                                                                                                                                                                       | B                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | E                                                                                   |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |   |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                 | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Phs Duration (G+Y+Rc), s     | 14.8                                                                              | 83.5                                                                                                                                                                                                                                                  | 6.4                                                                               | 15.3                                                                              | 6.4                                                                                                                                                                                                                                                   | 91.9                                                                              | 8.1                                                                                 | 13.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Change Period (Y+Rc), s      | 4.6                                                                               | 6.5                                                                                                                                                                                                                                                   | 4.6                                                                               | 4.6                                                                               | 4.6                                                                                                                                                                                                                                                   | 6.5                                                                               | 4.6                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Max Green Setting (Gmax), s  | 15.8                                                                              | 56.7                                                                                                                                                                                                                                                  | 5.0                                                                               | 22.2                                                                              | 5.0                                                                                                                                                                                                                                                   | 67.5                                                                              | 5.0                                                                                 | 22.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Max Q Clear Time (g_c+I1), s | 10.2                                                                              | 22.9                                                                                                                                                                                                                                                  | 2.9                                                                               | 0.0                                                                               | 2.9                                                                                                                                                                                                                                                   | 59.5                                                                              | 3.6                                                                                 | 5.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Green Ext Time (p_c), s      | 0.1                                                                               | 19.9                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 7.9                                                                               | 0.0                                                                                 | 0.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| HCM 6th Ctrl Delay           | 15.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| HCM 6th LOS                  | B                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/23/2019

|                      |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |   |                                                                                       |                                                                                      |                                                                                      |                                                                                      |                                                                                      |  |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                                | NBL                                                                                                                                                                     | NBT                                                                                                                                                                     | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations  |  |    |  |   |    |  |   |   |   |   |   |  |
| Traffic Volume (vph) | 154                                                                               | 1159                                                                                                                                                                                                                                                  | 321                                                                               | 243                                                                                                                                                                 | 2375                                                                                                                                                                                                                                                  | 565                                                                                | 589                                                                                                                                                                     | 771                                                                                                                                                                     | 93                                                                                                                                                                      | 132                                                                                                                                                                     | 176                                                                                                                                                                     | 124                                                                                 |
| Future Volume (vph)  | 154                                                                               | 1159                                                                                                                                                                                                                                                  | 321                                                                               | 243                                                                                                                                                                 | 2375                                                                                                                                                                                                                                                  | 565                                                                                | 589                                                                                                                                                                     | 771                                                                                                                                                                     | 93                                                                                                                                                                      | 132                                                                                                                                                                     | 176                                                                                                                                                                     | 124                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                                                                                                                | NA                                                                                                                                                                                                                                                    | Perm                                                                               | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | pm+ov                                                                                                                                                                   | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     |                                                                                    | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       | 2                                                                                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                       | 6                                                                                  |                                                                                                                                                                         |                                                                                                                                                                         | 8                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 2                                                                                 | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     | 6                                                                                  | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                              | 5.0                                                                                                                                                                 | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                               | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 5.0                                                                                                                                                                     | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                              | 8.7                                                                                                                                                                 | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                               | 8.7                                                                                                                                                                     | 15.8                                                                                                                                                                    | 8.7                                                                                                                                                                     | 8.7                                                                                                                                                                     | 49.8                                                                                                                                                                    | 49.8                                                                                |
| Total Split (s)      | 10.0                                                                              | 46.0                                                                                                                                                                                                                                                  | 46.0                                                                              | 10.4                                                                                                                                                                | 46.4                                                                                                                                                                                                                                                  | 46.4                                                                               | 12.8                                                                                                                                                                    | 49.8                                                                                                                                                                    | 10.4                                                                                                                                                                    | 13.8                                                                                                                                                                    | 50.8                                                                                                                                                                    | 50.8                                                                                |
| Total Split (%)      | 8.3%                                                                              | 38.3%                                                                                                                                                                                                                                                 | 38.3%                                                                             | 8.7%                                                                                                                                                                | 38.7%                                                                                                                                                                                                                                                 | 38.7%                                                                              | 10.7%                                                                                                                                                                   | 41.5%                                                                                                                                                                   | 8.7%                                                                                                                                                                    | 11.5%                                                                                                                                                                   | 42.3%                                                                                                                                                                   | 42.3%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 3.2                                                                                                                                                                 | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 3.2                                                                                                                                                                     | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 0.5                                                                                                                                                                 | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 0.5                                                                                                                                                                     | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                 | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                                | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 3.7                                                                                                                                                                     | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                                                                                                                                                                                                   | Lag                                                                               | Lead                                                                                                                                                                | Lag                                                                                                                                                                                                                                                   | Lag                                                                                | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lead                                                                                                                                                                    | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                                                                                                                                                                                                   | Yes                                                                               | Yes                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                   | Yes                                                                                | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | None                                                                                                                                                                | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                              | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. &amp; Alessandro Bl.

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              |                                                                                     | Ø3                                                                                  | Ø4                                                                                  |                                                                                     | Ø5                                                                                  | Ø6 (R)                                                                                | Ø7                                                                                    |
| 10.4 s                                                                              | 46 s                                                                                |                                                                                     | 12.8 s                                                                              | 50.8 s                                                                              |                                                                                     | 10 s                                                                                | 46.4 s                                                                                | 13.8 s                                                                                |
|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                       | 49.8 s                                                                                |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/23/2019

|                              |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |  |                                                                                      |                                                                                                                                                                          |                                                                                      |                                                                                      |                                                                                                                                                                          |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                                                                                                         | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                                                                                                         | SBR                                                                                 |
| Lane Configurations          |  |    |  |   |    |  |   |    |   |   |    |  |
| Traffic Volume (veh/h)       | 154                                                                               | 1159                                                                                                                                                                                                                                                  | 321                                                                               | 243                                                                                                                                                                 | 2375                                                                                                                                                                                                                                                  | 565                                                                               | 589                                                                                                                                                                     | 771                                                                                                                                                                                                                                                         | 93                                                                                                                                                                      | 132                                                                                                                                                                     | 176                                                                                                                                                                                                                                                         | 124                                                                                 |
| Future Volume (veh/h)        | 154                                                                               | 1159                                                                                                                                                                                                                                                  | 321                                                                               | 243                                                                                                                                                                 | 2375                                                                                                                                                                                                                                                  | 565                                                                               | 589                                                                                                                                                                     | 771                                                                                                                                                                                                                                                         | 93                                                                                                                                                                      | 132                                                                                                                                                                     | 176                                                                                                                                                                                                                                                         | 124                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                     | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                         | No                                                                                                                                                                                                                                                          |                                                                                                                                                                         |                                                                                                                                                                         | No                                                                                                                                                                                                                                                          |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                    | 1900                                                                                                                                                                                                                                                        | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                                                                                                        | 1900                                                                                |
| Adj Flow Rate, veh/h         | 162                                                                               | 1220                                                                                                                                                                                                                                                  | 338                                                                               | 256                                                                                                                                                                 | 2500                                                                                                                                                                                                                                                  | 595                                                                               | 620                                                                                                                                                                     | 812                                                                                                                                                                                                                                                         | 98                                                                                                                                                                      | 139                                                                                                                                                                     | 185                                                                                                                                                                                                                                                         | 131                                                                                 |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                                                                                                                | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                                                                                                        | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                                                                                                        | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                   |
| Cap, veh/h                   | 95                                                                                | 2354                                                                                                                                                                                                                                                  | 731                                                                               | 196                                                                                                                                                                 | 2371                                                                                                                                                                                                                                                  | 735                                                                               | 266                                                                                                                                                                     | 977                                                                                                                                                                                                                                                         | 925                                                                                                                                                                     | 195                                                                                                                                                                     | 904                                                                                                                                                                                                                                                         | 403                                                                                 |
| Arrive On Green              | 0.02                                                                              | 0.15                                                                                                                                                                                                                                                  | 0.15                                                                              | 0.06                                                                                                                                                                | 0.46                                                                                                                                                                                                                                                  | 0.46                                                                              | 0.08                                                                                                                                                                    | 0.27                                                                                                                                                                                                                                                        | 0.27                                                                                                                                                                    | 0.06                                                                                                                                                                    | 0.25                                                                                                                                                                                                                                                        | 0.25                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                | 5187                                                                                                                                                                                                                                                  | 1609                                                                              | 3510                                                                                                                                                                    | 3610                                                                                                                                                                                                                                                        | 2834                                                                                                                                                                    | 3510                                                                                                                                                                    | 3610                                                                                                                                                                                                                                                        | 1610                                                                                |
| Grp Volume(v), veh/h         | 162                                                                               | 1220                                                                                                                                                                                                                                                  | 338                                                                               | 256                                                                                                                                                                 | 2500                                                                                                                                                                                                                                                  | 595                                                                               | 620                                                                                                                                                                     | 812                                                                                                                                                                                                                                                         | 98                                                                                                                                                                      | 139                                                                                                                                                                     | 185                                                                                                                                                                                                                                                         | 131                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                | 1729                                                                                                                                                                                                                                                  | 1609                                                                              | 1755                                                                                                                                                                    | 1805                                                                                                                                                                                                                                                        | 1417                                                                                                                                                                    | 1755                                                                                                                                                                    | 1805                                                                                                                                                                                                                                                        | 1610                                                                                |
| Q Serve(g_s), s              | 6.3                                                                               | 26.0                                                                                                                                                                                                                                                  | 23.0                                                                              | 6.7                                                                                                                                                                 | 54.8                                                                                                                                                                                                                                                  | 38.2                                                                              | 9.1                                                                                                                                                                     | 25.4                                                                                                                                                                                                                                                        | 2.9                                                                                                                                                                     | 4.7                                                                                                                                                                     | 4.9                                                                                                                                                                                                                                                         | 8.0                                                                                 |
| Cycle Q Clear(g_c), s        | 6.3                                                                               | 26.0                                                                                                                                                                                                                                                  | 23.0                                                                              | 6.7                                                                                                                                                                 | 54.8                                                                                                                                                                                                                                                  | 38.2                                                                              | 9.1                                                                                                                                                                     | 25.4                                                                                                                                                                                                                                                        | 2.9                                                                                                                                                                     | 4.7                                                                                                                                                                     | 4.9                                                                                                                                                                                                                                                         | 8.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 95                                                                                | 2354                                                                                                                                                                                                                                                  | 731                                                                               | 196                                                                                                                                                                 | 2371                                                                                                                                                                                                                                                  | 735                                                                               | 266                                                                                                                                                                     | 977                                                                                                                                                                                                                                                         | 925                                                                                                                                                                     | 195                                                                                                                                                                     | 904                                                                                                                                                                                                                                                         | 403                                                                                 |
| V/C Ratio(X)                 | 1.71                                                                              | 0.52                                                                                                                                                                                                                                                  | 0.46                                                                              | 1.31                                                                                                                                                                | 1.05                                                                                                                                                                                                                                                  | 0.81                                                                              | 2.33                                                                                                                                                                    | 0.83                                                                                                                                                                                                                                                        | 0.11                                                                                                                                                                    | 0.71                                                                                                                                                                    | 0.20                                                                                                                                                                                                                                                        | 0.32                                                                                |
| Avail Cap(c_a), veh/h        | 95                                                                                | 2354                                                                                                                                                                                                                                                  | 731                                                                               | 196                                                                                                                                                                 | 2371                                                                                                                                                                                                                                                  | 735                                                                               | 266                                                                                                                                                                     | 1324                                                                                                                                                                                                                                                        | 1197                                                                                                                                                                    | 295                                                                                                                                                                     | 1354                                                                                                                                                                                                                                                        | 604                                                                                 |
| HCM Platoon Ratio            | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Upstream Filter(I)           | 0.84                                                                              | 0.84                                                                                                                                                                                                                                                  | 0.84                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.0                                                                              | 38.9                                                                                                                                                                                                                                                  | 37.7                                                                              | 56.7                                                                                                                                                                | 32.6                                                                                                                                                                                                                                                  | 28.1                                                                              | 55.5                                                                                                                                                                    | 41.2                                                                                                                                                                                                                                                        | 28.2                                                                                                                                                                    | 55.7                                                                                                                                                                    | 35.5                                                                                                                                                                                                                                                        | 36.7                                                                                |
| Incr Delay (d2), s/veh       | 352.1                                                                             | 0.7                                                                                                                                                                                                                                                   | 1.8                                                                               | 169.6                                                                                                                                                               | 34.8                                                                                                                                                                                                                                                  | 9.3                                                                               | 609.7                                                                                                                                                                   | 3.4                                                                                                                                                                                                                                                         | 0.0                                                                                                                                                                     | 1.8                                                                                                                                                                     | 0.1                                                                                                                                                                                                                                                         | 0.5                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 12.2                                                                              | 12.1                                                                                                                                                                                                                                                  | 10.2                                                                              | 7.5                                                                                                                                                                 | 28.8                                                                                                                                                                                                                                                  | 15.6                                                                              | 26.5                                                                                                                                                                    | 11.3                                                                                                                                                                                                                                                        | 1.0                                                                                                                                                                     | 2.1                                                                                                                                                                     | 2.1                                                                                                                                                                                                                                                         | 3.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| LnGrp Delay(d),s/veh         | 411.0                                                                             | 39.6                                                                                                                                                                                                                                                  | 39.4                                                                              | 226.2                                                                                                                                                               | 67.4                                                                                                                                                                                                                                                  | 37.4                                                                              | 665.1                                                                                                                                                                   | 44.6                                                                                                                                                                                                                                                        | 28.2                                                                                                                                                                    | 57.5                                                                                                                                                                    | 35.6                                                                                                                                                                                                                                                        | 37.2                                                                                |
| LnGrp LOS                    | F                                                                                 | D                                                                                                                                                                                                                                                     | D                                                                                 | F                                                                                                                                                                   | F                                                                                                                                                                                                                                                     | D                                                                                 | F                                                                                                                                                                       | D                                                                                                                                                                                                                                                           | C                                                                                                                                                                       | E                                                                                                                                                                       | D                                                                                                                                                                                                                                                           | D                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 1720                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 3351                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         | 1530                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         | 455                                                                                                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 74.6                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 74.2                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         | 295.0                                                                                                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 42.8                                                                                                                                                                                                                                                        |                                                                                     |
| Approach LOS                 |                                                                                   | E                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     | E                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         | F                                                                                                                                                                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         | D                                                                                                                                                                                                                                                           |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 7                                                                                                                                                                       | 8                                                                                                                                                                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.4                                                                              | 60.9                                                                                                                                                                                                                                                  | 12.8                                                                              | 35.9                                                                                                                                                                | 10.0                                                                                                                                                                                                                                                  | 61.3                                                                              | 10.4                                                                                                                                                                    | 38.3                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 3.7                                                                               | 5.8                                                                                                                                                                 | 3.7                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Max Green Setting (Gmax), s  | 6.7                                                                               | 39.5                                                                                                                                                                                                                                                  | 9.1                                                                               | 45.0                                                                                                                                                                | 6.3                                                                                                                                                                                                                                                   | 39.9                                                                              | 10.1                                                                                                                                                                    | 44.0                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 8.7                                                                               | 28.0                                                                                                                                                                                                                                                  | 11.1                                                                              | 10.0                                                                                                                                                                | 8.3                                                                                                                                                                                                                                                   | 56.8                                                                              | 6.7                                                                                                                                                                     | 27.4                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 8.2                                                                                                                                                                                                                                                   | 0.0                                                                               | 1.5                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.1                                                                                                                                                                     | 5.1                                                                                                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 120.2                                                                             |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | F                                                                                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↱     | ↱     |
| Traffic Volume (vph) | 931   | 2816  | 284   | 0     | 471   |
| Future Volume (vph)  | 931   | 2816  | 284   | 0     | 471   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 63.0  | 63.0  | 22.0  | 22.0  | 22.0  |
| Total Split (%)      | 74.1% | 74.1% | 25.9% | 25.9% | 25.9% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 9 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.

|          |  |      |
|----------|--|------|
| → Ø2 (R) |  | ↰ Ø4 |
| 63 s     |  | 22 s |
| ← Ø6 (R) |  |      |
| 63 s     |  |      |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/22/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     | ↱                                                                                   | ↕                                                                                   | ↲                                                                                   |
| Traffic Volume (veh/h)       | 0                                                                                 | 931                                                                               | 392                                                                               | 0                                                                                 | 2816                                                                              | 220                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 284                                                                                 | 0                                                                                   | 471                                                                                 |
| Future Volume (veh/h)        | 0                                                                                 | 931                                                                               | 392                                                                               | 0                                                                                 | 2816                                                                              | 220                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 284                                                                                 | 0                                                                                   | 471                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              |                                                                                     |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 0                                                                                 | 960                                                                               | 375                                                                               | 0                                                                                 | 2903                                                                              | 227                                                                               |                                                                                     |                                                                                     |                                                                                     | 195                                                                                 | 0                                                                                   | 546                                                                                 |
| Peak Hour Factor             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 0                                                                                 | 2491                                                                              | 972                                                                               | 0                                                                                 | 3356                                                                              | 255                                                                               |                                                                                     |                                                                                     |                                                                                     | 349                                                                                 | 0                                                                                   | 620                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.68                                                                              | 0.68                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.19                                                                                | 0.00                                                                                | 0.19                                                                                |
| Sat Flow, veh/h              | 0                                                                                 | 3814                                                                              | 1422                                                                              | 0                                                                                 | 5079                                                                              | 373                                                                               |                                                                                     |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 3215                                                                                |
| Grp Volume(v), veh/h         | 0                                                                                 | 911                                                                               | 424                                                                               | 0                                                                                 | 2020                                                                              | 1110                                                                              |                                                                                     |                                                                                     |                                                                                     | 195                                                                                 | 0                                                                                   | 546                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 0                                                                                 | 1729                                                                              | 1607                                                                              | 0                                                                                 | 1729                                                                              | 1823                                                                              |                                                                                     |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 1608                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 9.6                                                                               | 9.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 8.3                                                                                 | 0.0                                                                                 | 14.0                                                                                |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 9.6                                                                               | 9.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 8.3                                                                                 | 0.0                                                                                 | 14.0                                                                                |
| Prop In Lane                 | 0.00                                                                              |                                                                                   | 0.88                                                                              | 0.00                                                                              |                                                                                   | 0.20                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 0                                                                                 | 2364                                                                              | 1099                                                                              | 0                                                                                 | 2364                                                                              | 1247                                                                              |                                                                                     |                                                                                     |                                                                                     | 349                                                                                 | 0                                                                                   | 620                                                                                 |
| V/C Ratio(X)                 | 0.00                                                                              | 0.39                                                                              | 0.39                                                                              | 0.00                                                                              | 0.85                                                                              | 0.89                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.56                                                                                | 0.00                                                                                | 0.88                                                                                |
| Avail Cap(c_a), veh/h        | 0                                                                                 | 2364                                                                              | 1099                                                                              | 0                                                                                 | 2364                                                                              | 1247                                                                              |                                                                                     |                                                                                     |                                                                                     | 362                                                                                 | 0                                                                                   | 643                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                              | 2.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.28                                                                              | 0.28                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 5.8                                                                               | 5.8                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 31.0                                                                                | 0.0                                                                                 | 33.4                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.5                                                                               | 1.0                                                                               | 0.0                                                                               | 1.2                                                                               | 3.1                                                                               |                                                                                     |                                                                                     |                                                                                     | 1.8                                                                                 | 0.0                                                                                 | 13.2                                                                                |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 2.3                                                                               | 2.3                                                                               | 0.0                                                                               | 0.4                                                                               | 1.1                                                                               |                                                                                     |                                                                                     |                                                                                     | 3.6                                                                                 | 0.0                                                                                 | 6.2                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 6.2                                                                               | 6.8                                                                               | 0.0                                                                               | 1.2                                                                               | 3.1                                                                               |                                                                                     |                                                                                     |                                                                                     | 32.8                                                                                | 0.0                                                                                 | 46.6                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                     |                                                                                     |                                                                                     | C                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 1335                                                                              |                                                                                   |                                                                                   | 3130                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 741                                                                                 |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 6.4                                                                               |                                                                                   |                                                                                   | 1.9                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 43.0                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 63.6                                                                              |                                                                                   |                                                                                   | 21.4                                                                              |                                                                                   |                                                                                   | 63.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 57.5                                                                              |                                                                                   |                                                                                   | 17.0                                                                              |                                                                                   |                                                                                   | 57.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 11.6                                                                              |                                                                                   |                                                                                   | 16.0                                                                              |                                                                                   |                                                                                   | 2.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 10.5                                                                              |                                                                                   |                                                                                   | 0.3                                                                               |                                                                                   |                                                                                   | 44.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 8.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBL   | EBT   | WBT   | WBR   | NBL   | NBT   | NBR   |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations  |       |       |       |       |       |       |       |
| Traffic Volume (vph) | 102   | 1149  | 1840  | 191   | 1092  | 4     | 245   |
| Future Volume (vph)  | 102   | 1149  | 1840  | 191   | 1092  | 4     | 245   |
| Turn Type            | Prot  | NA    | NA    | Perm  | Split | NA    | Perm  |
| Protected Phases     | 5     | 2     | 6     |       | 8     | 8     |       |
| Permitted Phases     |       |       |       | 6     |       |       | 8     |
| Detector Phase       | 5     | 2     | 6     | 6     | 8     | 8     | 8     |
| Switch Phase         |       |       |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 9.5   | 10.5  | 33.5  | 33.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 10.0  | 49.0  | 39.0  | 39.0  | 36.0  | 36.0  | 36.0  |
| Total Split (%)      | 11.8% | 57.6% | 45.9% | 45.9% | 42.4% | 42.4% | 42.4% |
| Yellow Time (s)      | 3.5   | 4.5   | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.5   | 5.5   | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             | Lag   |       | Lead  | Lead  |       |       |       |
| Lead-Lag Optimize?   | Yes   |       | Yes   | Yes   |       |       |       |
| Recall Mode          | None  | C-Max | C-Max | C-Max | Max   | Max   | Max   |

### Intersection Summary

Cycle Length: 85

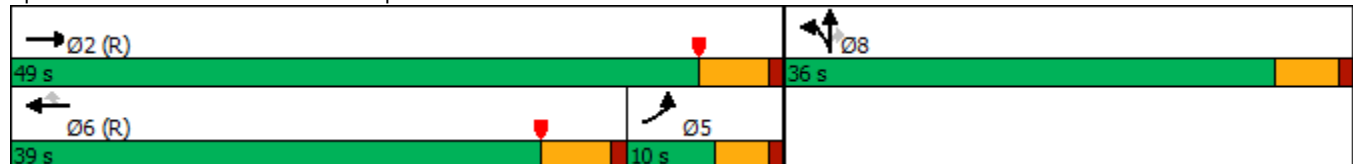
Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                                                                                                    |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)                                                                             | 102                                                                               | 1149                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1840                                                                                                                                                                                                                                                  | 191                                                                               | 1092                                                                                | 4                                                                                                                                                                       | 245                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)                                                                              | 102                                                                               | 1149                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1840                                                                                                                                                                                                                                                  | 191                                                                               | 1092                                                                                | 4                                                                                                                                                                       | 245                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach                                                                              | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h                                                                               | 104                                                                               | 1172                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1878                                                                                                                                                                                                                                                  | 175                                                                               | 1174                                                                                | 0                                                                                                                                                                       | 127                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor                                                                                   | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                                | 0.98                                                                                                                                                                    | 0.98                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                                                                                         | 423                                                                               | 3592                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green                                                                                    | 0.47                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.39                                                                                                                                                                                                                                                  | 0.39                                                                              | 0.36                                                                                | 0.00                                                                                                                                                                    | 0.36                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h                                                                                    | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1573                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h                                                                               | 104                                                                               | 1172                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1878                                                                                                                                                                                                                                                  | 175                                                                               | 1174                                                                                | 0                                                                                                                                                                       | 127                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                                                           | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1573                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                                                    | 2.9                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 29.2                                                                                                                                                                                                                                                  | 6.4                                                                               | 25.9                                                                                | 0.0                                                                                                                                                                     | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                                              | 2.9                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 29.2                                                                                                                                                                                                                                                  | 6.4                                                                               | 25.9                                                                                | 0.0                                                                                                                                                                     | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                                                       | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                                                             | 423                                                                               | 3592                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                                                       | 0.25                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.28                                                                              | 0.89                                                                                | 0.00                                                                                                                                                                    | 0.22                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                                              | 423                                                                               | 3592                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                                                  | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)                                                                                 | 0.89                                                                              | 0.89                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                                                           | 18.1                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 24.5                                                                                                                                                                                                                                                  | 17.6                                                                              | 25.4                                                                                | 0.0                                                                                                                                                                     | 18.6                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                                                             | 0.2                                                                               | 0.2                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 8.1                                                                                                                                                                                                                                                   | 1.1                                                                               | 9.3                                                                                 | 0.0                                                                                                                                                                     | 0.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                                                           | 1.1                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 11.6                                                                                                                                                                                                                                                  | 2.2                                                                               | 11.6                                                                                | 0.0                                                                                                                                                                     | 1.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 18.3                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 32.6                                                                                                                                                                                                                                                  | 18.7                                                                              | 34.6                                                                                | 0.0                                                                                                                                                                     | 19.5                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                                                          | B                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | B                                                                                 | C                                                                                   | A                                                                                                                                                                       | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                                                | 1276                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2053                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1301                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                              | 1.7                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 31.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 33.2                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                       | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                               | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           | 64.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 25.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 39.0                                                                                |                                                                                                                                                                         |                                                                                     | 36.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 5.5                                                                               |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        | 43.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 34                                                                                |                                                                                                                                                                         |                                                                                     | 31.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       | 2.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.9                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 31.2                                                                                |                                                                                                                                                                         |                                                                                     | 27.9                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            | 8.9                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 2.0                                                                                 |                                                                                                                                                                         |                                                                                     | 1.7                                                                                 |                                                                                     |                                                                                     |
| Intersection Summary                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 | 23.7                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved volume balancing among the lanes for turning movement.                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/23/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 6                                                                                 | 2639                                                                              | 67                                                                                | 2251                                                                              | 15                                                                                | 64                                                                                | 5                                                                                   | 47                                                                                  | 14                                                                                  | 5                                                                                   | 13                                                                                  |
| Future Volume (vph)  | 6                                                                                 | 2639                                                                              | 67                                                                                | 2251                                                                              | 15                                                                                | 64                                                                                | 5                                                                                   | 47                                                                                  | 14                                                                                  | 5                                                                                   | 13                                                                                  |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 68.4                                                                              | 11.0                                                                              | 70.2                                                                              | 70.2                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                |
| Total Split (%)      | 7.7%                                                                              | 57.0%                                                                             | 9.2%                                                                              | 58.5%                                                                             | 58.5%                                                                             | 33.8%                                                                             | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

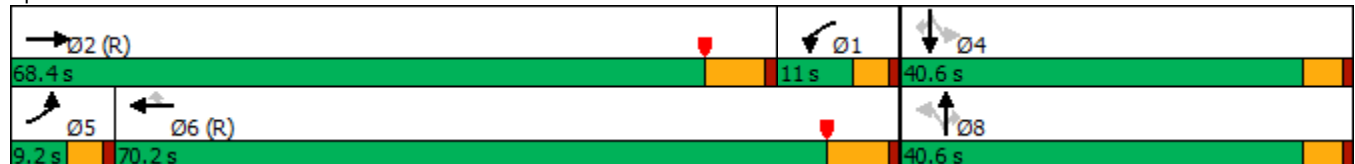
Actuated Cycle Length: 120

Offset: 71 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 6                                                                                 | 2639                                                                              | 46                                                                                | 67                                                                                | 2251                                                                              | 15                                                                                | 64                                                                                 | 5                                                                                   | 47                                                                                  | 14                                                                                  | 5                                                                                   | 13                                                                                  |
| Future Volume (veh/h)        | 6                                                                                 | 2639                                                                              | 46                                                                                | 67                                                                                | 2251                                                                              | 15                                                                                | 64                                                                                 | 5                                                                                   | 47                                                                                  | 14                                                                                  | 5                                                                                   | 13                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 0.99                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 6                                                                                 | 2778                                                                              | 46                                                                                | 71                                                                                | 2369                                                                              | 16                                                                                | 67                                                                                 | 5                                                                                   | 27                                                                                  | 15                                                                                  | 5                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 14                                                                                | 2711                                                                              | 45                                                                                | 624                                                                               | 4523                                                                              | 1404                                                                              | 58                                                                                 | 2                                                                                   | 482                                                                                 | 53                                                                                  | 11                                                                                  | 477                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.52                                                                              | 0.52                                                                              | 0.23                                                                              | 0.58                                                                              | 0.58                                                                              | 0.30                                                                               | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5256                                                                              | 87                                                                                | 1810                                                                              | 5187                                                                              | 1610                                                                              | 0                                                                                  | 8                                                                                   | 1605                                                                                | 0                                                                                   | 35                                                                                  | 1590                                                                                |
| Grp Volume(v), veh/h         | 6                                                                                 | 1823                                                                              | 1001                                                                              | 71                                                                                | 2369                                                                              | 16                                                                                | 72                                                                                 | 0                                                                                   | 27                                                                                  | 20                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1884                                                                              | 1810                                                                              | 1729                                                                              | 1610                                                                              | 8                                                                                  | 0                                                                                   | 1605                                                                                | 35                                                                                  | 0                                                                                   | 1590                                                                                |
| Q Serve(g_s), s              | 0.4                                                                               | 61.9                                                                              | 61.9                                                                              | 3.7                                                                               | 32.8                                                                              | 0.5                                                                               | 0.0                                                                                | 0.0                                                                                 | 1.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.4                                                                               | 61.9                                                                              | 61.9                                                                              | 3.7                                                                               | 32.8                                                                              | 0.5                                                                               | 36.0                                                                               | 0.0                                                                                 | 1.4                                                                                 | 36.0                                                                                | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.05                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 0.93                                                                               |                                                                                     | 1.00                                                                                | 0.75                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 14                                                                                | 1784                                                                              | 972                                                                               | 624                                                                               | 4523                                                                              | 1404                                                                              | 60                                                                                 | 0                                                                                   | 482                                                                                 | 63                                                                                  | 0                                                                                   | 477                                                                                 |
| V/C Ratio(X)                 | 0.44                                                                              | 1.02                                                                              | 1.03                                                                              | 0.11                                                                              | 0.52                                                                              | 0.01                                                                              | 1.19                                                                               | 0.00                                                                                | 0.06                                                                                | 0.32                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 1784                                                                              | 972                                                                               | 624                                                                               | 4523                                                                              | 1404                                                                              | 60                                                                                 | 0                                                                                   | 482                                                                                 | 63                                                                                  | 0                                                                                   | 477                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.67                                                                              | 0.67                                                                              | 0.67                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.83                                                                              | 0.83                                                                              | 0.83                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.3                                                                              | 29.0                                                                              | 29.1                                                                              | 31.7                                                                              | 10.0                                                                              | 3.3                                                                               | 58.6                                                                               | 0.0                                                                                 | 29.9                                                                                | 41.2                                                                                | 0.0                                                                                 | 29.4                                                                                |
| Incr Delay (d2), s/veh       | 8.0                                                                               | 27.1                                                                              | 36.7                                                                              | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 177.7                                                                              | 0.0                                                                                 | 0.2                                                                                 | 12.7                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 29.1                                                                              | 34.2                                                                              | 1.6                                                                               | 12.9                                                                              | 0.0                                                                               | 4.8                                                                                | 0.0                                                                                 | 0.6                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 67.3                                                                              | 56.1                                                                              | 65.7                                                                              | 31.7                                                                              | 10.4                                                                              | 3.3                                                                               | 236.3                                                                              | 0.0                                                                                 | 30.1                                                                                | 53.9                                                                                | 0.0                                                                                 | 29.4                                                                                |
| LnGrp LOS                    | E                                                                                 | F                                                                                 | F                                                                                 | C                                                                                 | B                                                                                 | A                                                                                 | F                                                                                  | A                                                                                   | C                                                                                   | D                                                                                   | A                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 2830                                                                              |                                                                                   |                                                                                   |                                                                                   | 2456                                                                              |                                                                                   |                                                                                    |                                                                                     | 99                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 59.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 10.9                                                                              |                                                                                   |                                                                                    |                                                                                     | 180.0                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | E                                                                                 |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                    |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 48.5                                                                              | 68.4                                                                              |                                                                                   | 40.6                                                                              | 5.1                                                                               | 111.8                                                                             |                                                                                    | 40.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 6.5                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               | * 4.2                                                                             | 6.5                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.8                                                                               | * 62                                                                              |                                                                                   | 36.0                                                                              | * 5                                                                               | 63.7                                                                              |                                                                                    | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.7                                                                               | 63.9                                                                              |                                                                                   | 38.0                                                                              | 2.4                                                                               | 34.8                                                                              |                                                                                    | 38.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 24.6                                                                              |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 39.7 |
| HCM 6th LOS        | D    |

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/23/2019

|                      |  |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | Ø6   |
| Lane Configurations  |  |  |  |  |                                                                                   |  |      |
| Traffic Volume (vph) | 3                                                                                 | 2668                                                                              | 3                                                                                 | 2403                                                                              | 5                                                                                 | 0                                                                                 |      |
| Future Volume (vph)  | 3                                                                                 | 2668                                                                              | 3                                                                                 | 2403                                                                              | 5                                                                                 | 0                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                |      |
| Protected Phases     | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |                                                                                   | 2                                                                                 | 6    |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |      |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.2                                                                               | 23.5                                                                              | 9.2                                                                               | 23.5                                                                              | 14.6                                                                              | 14.6                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 95.0                                                                              | 10.0                                                                              | 95.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0 |
| Total Split (%)      | 8.3%                                                                              | 79.2%                                                                             | 8.3%                                                                              | 79.2%                                                                             | 12.5%                                                                             | 12.5%                                                                             | 13%  |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                               |      |
| Lead/Lag             | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lead                                                                              |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                   |      |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|                                                                                     |    |                                                                                     |        |                                                                                       |    |
|-------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------|----|
|  | Ø2 |  | Ø4 (R) |  | Ø3 |
| 15 s                                                                                |    | 95 s                                                                                |        | 10 s                                                                                  |    |
|  | Ø6 |  | Ø8 (R) |  | Ø7 |
| 15 s                                                                                |    | 95 s                                                                                |        | 10 s                                                                                  |    |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 3                                                                                 | 2668                                                                              | 1                                                                                 | 3                                                                                 | 2403                                                                              | 0                                                                                 | 5                                                                                  | 0                                                                                   | 2                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2668                                                                              | 1                                                                                 | 3                                                                                 | 2403                                                                              | 0                                                                                 | 5                                                                                  | 0                                                                                   | 2                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2900                                                                              | 1                                                                                 | 3                                                                                 | 2612                                                                              | 0                                                                                 | 5                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 221                                                                               | 3950                                                                              | 1                                                                                 | 221                                                                               | 3825                                                                              | 0                                                                                 | 78                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 24                                                                                  | 0                                                                                   |
| Arrive On Green              | 0.24                                                                              | 1.00                                                                              | 1.00                                                                              | 0.12                                                                              | 0.74                                                                              | 0.00                                                                              | 0.01                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5356                                                                              | 2                                                                                 | 1810                                                                              | 5358                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Grp Volume(v), veh/h         | 3                                                                                 | 1872                                                                              | 1029                                                                              | 3                                                                                 | 2612                                                                              | 0                                                                                 | 5                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1900                                                                              | 1810                                                                              | 1729                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 32.0                                                                              | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 32.0                                                                              | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                               |                                                                                     | 0.00                                                                                | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 221                                                                               | 2550                                                                              | 1401                                                                              | 221                                                                               | 3825                                                                              | 0                                                                                 | 78                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 24                                                                                  | 0                                                                                   |
| V/C Ratio(X)                 | 0.01                                                                              | 0.73                                                                              | 0.73                                                                              | 0.01                                                                              | 0.68                                                                              | 0.00                                                                              | 0.06                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 221                                                                               | 2550                                                                              | 1401                                                                              | 221                                                                               | 3825                                                                              | 0                                                                                 | 185                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 165                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 0.09                                                                              | 0.09                                                                              | 0.09                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 39.9                                                                              | 0.0                                                                               | 0.0                                                                               | 46.3                                                                              | 8.3                                                                               | 0.0                                                                               | 58.7                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.2                                                                               | 0.3                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 0.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.1                                                                               | 0.1                                                                               | 0.1                                                                               | 8.7                                                                               | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 39.9                                                                              | 0.2                                                                               | 0.3                                                                               | 46.3                                                                              | 9.3                                                                               | 0.0                                                                               | 59.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                  | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 2904                                                                              |                                                                                   |                                                                                   | 2615                                                                              |                                                                                   |                                                                                   | 5                                                                                  |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.3                                                                               |                                                                                   |                                                                                   | 9.4                                                                               |                                                                                   |                                                                                   | 59.0                                                                               |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | E                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 6.1                                                                               |                                                                                   | 18.9                                                                              | 95.0                                                                              |                                                                                   | 6.1                                                                               |                                                                                    | 18.9                                                                                | 95.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.2                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               |                                                                                    | 4.2                                                                                 | * 6.5                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                   | 5.8                                                                               | * 89                                                                              |                                                                                   | 10.4                                                                              |                                                                                    | 5.8                                                                                 | * 89                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.4                                                                               |                                                                                   | 2.2                                                                               | 2.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 2.2                                                                                 | 34.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 71.8                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 45.5                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 4.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection               |           |                        |        |                            |       |                                |
|----------------------------|-----------|------------------------|--------|----------------------------|-------|--------------------------------|
| Int Delay, s/veh           | 1.6       |                        |        |                            |       |                                |
| Movement                   | EBT       | EBR                    | WBL    | WBT                        | NBL   | NBR                            |
| Lane Configurations        | ↑↑↑       |                        | ↑      | ↑↑↑                        | ↑     | ↑                              |
| Traffic Vol, veh/h         | 2659      | 13                     | 25     | 2398                       | 2     | 10                             |
| Future Vol, veh/h          | 2659      | 13                     | 25     | 2398                       | 2     | 10                             |
| Conflicting Peds, #/hr     | 0         | 0                      | 0      | 0                          | 0     | 0                              |
| Sign Control               | Free      | Free                   | Free   | Free                       | Stop  | Stop                           |
| RT Channelized             | -         | None                   | -      | None                       | -     | None                           |
| Storage Length             | -         | -                      | 155    | -                          | 0     | 0                              |
| Veh in Median Storage, #   | 0         | -                      | -      | 0                          | 0     | -                              |
| Grade, %                   | 0         | -                      | -      | 0                          | 0     | -                              |
| Peak Hour Factor           | 92        | 92                     | 92     | 92                         | 92    | 92                             |
| Heavy Vehicles, %          | 0         | 0                      | 0      | 0                          | 0     | 0                              |
| Mvmt Flow                  | 2890      | 14                     | 27     | 2607                       | 2     | 11                             |
|                            |           |                        |        |                            |       |                                |
| Major/Minor                | Major1    | Major2                 | Minor1 |                            |       |                                |
| Conflicting Flow All       | 0         | 0                      | 2904   | 0                          | 3994  | 1452                           |
| Stage 1                    | -         | -                      | -      | -                          | 2897  | -                              |
| Stage 2                    | -         | -                      | -      | -                          | 1097  | -                              |
| Critical Hdwy              | -         | -                      | 5.3    | -                          | 5.7   | 7.1                            |
| Critical Hdwy Stg 1        | -         | -                      | -      | -                          | 6.6   | -                              |
| Critical Hdwy Stg 2        | -         | -                      | -      | -                          | 6     | -                              |
| Follow-up Hdwy             | -         | -                      | 3.1    | -                          | 3.8   | 3.9                            |
| Pot Cap-1 Maneuver         | -         | -                      | 44     | -                          | 7     | 105                            |
| Stage 1                    | -         | -                      | -      | -                          | 15    | -                              |
| Stage 2                    | -         | -                      | -      | -                          | 257   | -                              |
| Platoon blocked, %         | -         | -                      | -      | -                          | -     | -                              |
| Mov Cap-1 Maneuver         | -         | -                      | 44     | -                          | 3     | 105                            |
| Mov Cap-2 Maneuver         | -         | -                      | -      | -                          | 3     | -                              |
| Stage 1                    | -         | -                      | -      | -                          | 15    | -                              |
| Stage 2                    | -         | -                      | -      | -                          | 99    | -                              |
|                            |           |                        |        |                            |       |                                |
|                            |           |                        |        |                            |       |                                |
| Approach                   | EB        | WB                     |        | NB                         |       |                                |
| HCM Control Delay, s       | 0         | 1.8                    |        | \$ 331.3                   |       |                                |
| HCM LOS                    | F         |                        |        |                            |       |                                |
|                            |           |                        |        |                            |       |                                |
|                            |           |                        |        |                            |       |                                |
| Minor Lane/Major Mvmt      | NBLn1     | NBLn2                  | EBT    | EBR                        | WBL   | WBT                            |
| Capacity (veh/h)           | 3         | 105                    | -      | -                          | 44    | -                              |
| HCM Lane V/C Ratio         | 0.725     | 0.104                  | -      | -                          | 0.618 | -                              |
| HCM Control Delay (s)      | \$ 1771.6 | 43.2                   | -      | -                          | 174.4 | -                              |
| HCM Lane LOS               | F         | E                      | -      | -                          | F     | -                              |
| HCM 95th %tile Q(veh)      | 0.9       | 0.3                    | -      | -                          | 2.3   | -                              |
| Notes                      |           |                        |        |                            |       |                                |
| ~: Volume exceeds capacity |           | \$: Delay exceeds 300s |        | +: Computation Not Defined |       | *: All major volume in platoon |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/23/2019



| Lane Group           | EBL  | EBT   | WBL  | WBT   | WBR   | NBL  | NBR   | SBL  | SBR   |
|----------------------|------|-------|------|-------|-------|------|-------|------|-------|
| Lane Configurations  |      |       |      |       |       |      |       |      |       |
| Traffic Volume (vph) | 15   | 2779  | 66   | 2422  | 22    | 33   | 123   | 29   | 17    |
| Future Volume (vph)  | 15   | 2779  | 66   | 2422  | 22    | 33   | 123   | 29   | 17    |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | Prot | Perm  | Prot | Perm  |
| Protected Phases     | 5    | 2     | 1    | 6     |       | 3    |       | 7    |       |
| Permitted Phases     |      |       |      |       | 6     |      | 8     |      | 4     |
| Detector Phase       | 5    | 2     | 1    | 6     | 6     | 3    | 8     | 7    | 4     |
| Switch Phase         |      |       |      |       |       |      |       |      |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 5.0  | 10.0  | 5.0  | 10.0  |
| Minimum Split (s)    | 9.6  | 16.5  | 9.6  | 30.5  | 30.5  | 9.6  | 26.6  | 9.6  | 14.6  |
| Total Split (s)      | 9.6  | 73.0  | 10.2 | 73.6  | 73.6  | 11.2 | 27.2  | 9.6  | 25.6  |
| Total Split (%)      | 8.0% | 60.8% | 8.5% | 61.3% | 61.3% | 9.3% | 22.7% | 8.0% | 21.3% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 5.5   | 3.6  | 3.6   | 3.6  | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0  | 1.0   | 1.0  | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   |
| Total Lost Time (s)  | 4.6  | 6.5   | 4.6  | 6.5   | 6.5   | 4.6  | 4.6   | 4.6  | 4.6   |
| Lead/Lag             | Lead | Lag   | Lead | Lag   | Lag   | Lead | Lag   | Lead | Lag   |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   | Yes   | Yes  | Yes   | Yes  | Yes   |
| Recall Mode          | None | C-Max | None | None  | None  | None | None  | None | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 76.7 (64%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.

|        |        |        |        |
|--------|--------|--------|--------|
|        |        |        |        |
| Ø1     | Ø2 (R) | Ø3     | Ø4     |
| 10.2 s | 73 s   | 11.2 s | 25.6 s |
|        |        |        |        |
| Ø5     | Ø6     | Ø7     | Ø8     |
| 9.6 s  | 73.6 s | 9.6 s  | 27.2 s |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 5: Alessandro Bl. & San Gorgonio Dr. 05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |   |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |   |
| Lane Configurations          |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |   |
| Traffic Volume (veh/h)       | 15                                                                                | 2779                                                                              | 18                                                                                | 66                                                                                | 2422                                                                              | 22                                                                                | 33                                                                                  | 0                                                                                   | 123                                                                                 | 29                                                                                  | 0                                                                                   | 17                                                                                  |   |
| Future Volume (veh/h)        | 15                                                                                | 2779                                                                              | 18                                                                                | 66                                                                                | 2422                                                                              | 22                                                                                | 33                                                                                  | 0                                                                                   | 123                                                                                 | 29                                                                                  | 0                                                                                   | 17                                                                                  |   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |   |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |   |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |   |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |   |
| Adj Flow Rate, veh/h         | 16                                                                                | 3054                                                                              | 20                                                                                | 72                                                                                | 2662                                                                              | 23                                                                                | 36                                                                                  | 0                                                                                   | 134                                                                                 | 32                                                                                  | 0                                                                                   | 0                                                                                   |   |
| Peak Hour Factor             | 0.91                                                                              | 0.91                                                                              | 0.92                                                                              | 0.92                                                                              | 0.91                                                                              | 0.91                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.91                                                                                | 0.92                                                                                | 0.91                                                                                |   |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |   |
| Cap, veh/h                   | 31                                                                                | 3438                                                                              | 22                                                                                | 84                                                                                | 3507                                                                              | 1065                                                                              | 53                                                                                  | 190                                                                                 | 161                                                                                 | 68                                                                                  | 206                                                                                 |                                                                                     |   |
| Arrive On Green              | 0.02                                                                              | 0.65                                                                              | 0.65                                                                              | 0.05                                                                              | 0.68                                                                              | 0.68                                                                              | 0.03                                                                                | 0.00                                                                                | 0.10                                                                                | 0.04                                                                                | 0.00                                                                                | 0.00                                                                                |   |
| Sat Flow, veh/h              | 1810                                                                              | 5317                                                                              | 35                                                                                | 1810                                                                              | 5187                                                                              | 1575                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |   |
| Grp Volume(v), veh/h         | 16                                                                                | 1984                                                                              | 1090                                                                              | 72                                                                                | 2662                                                                              | 23                                                                                | 36                                                                                  | 0                                                                                   | 134                                                                                 | 32                                                                                  | 0                                                                                   | 0                                                                                   |   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1894                                                                              | 1810                                                                              | 1729                                                                              | 1575                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |   |
| Q Serve(g_s), s              | 1.1                                                                               | 57.1                                                                              | 57.5                                                                              | 4.7                                                                               | 41.0                                                                              | 0.6                                                                               | 2.4                                                                                 | 0.0                                                                                 | 9.8                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Cycle Q Clear(g_c), s        | 1.1                                                                               | 57.1                                                                              | 57.5                                                                              | 4.7                                                                               | 41.0                                                                              | 0.6                                                                               | 2.4                                                                                 | 0.0                                                                                 | 9.8                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.02                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |   |
| Lane Grp Cap(c), veh/h       | 31                                                                                | 2236                                                                              | 1224                                                                              | 84                                                                                | 3507                                                                              | 1065                                                                              | 53                                                                                  | 190                                                                                 | 161                                                                                 | 68                                                                                  | 206                                                                                 |                                                                                     |   |
| V/C Ratio(X)                 | 0.51                                                                              | 0.89                                                                              | 0.89                                                                              | 0.85                                                                              | 0.76                                                                              | 0.02                                                                              | 0.68                                                                                | 0.00                                                                                | 0.83                                                                                | 0.47                                                                                | 0.00                                                                                |                                                                                     |   |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2236                                                                              | 1224                                                                              | 84                                                                                | 3507                                                                              | 1065                                                                              | 100                                                                                 | 358                                                                                 | 303                                                                                 | 75                                                                                  | 333                                                                                 |                                                                                     |   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |   |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.09                                                                              | 0.09                                                                              | 0.09                                                                              | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |   |
| Uniform Delay (d), s/veh     | 58.5                                                                              | 17.6                                                                              | 17.7                                                                              | 56.8                                                                              | 12.9                                                                              | 6.4                                                                               | 57.7                                                                                | 0.0                                                                                 | 53.0                                                                                | 56.6                                                                                | 0.0                                                                                 | 0.0                                                                                 |   |
| Incr Delay (d2), s/veh       | 4.8                                                                               | 5.7                                                                               | 9.9                                                                               | 7.7                                                                               | 0.1                                                                               | 0.0                                                                               | 14.5                                                                                | 0.0                                                                                 | 10.4                                                                                | 5.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| %ile BackOfQ(50%),veh/ln     | 0.5                                                                               | 19.9                                                                              | 23.4                                                                              | 2.3                                                                               | 12.4                                                                              | 0.2                                                                               | 1.3                                                                                 | 0.0                                                                                 | 4.5                                                                                 | 1.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| LnGrp Delay(d),s/veh         | 63.3                                                                              | 23.3                                                                              | 27.6                                                                              | 64.4                                                                              | 13.0                                                                              | 6.4                                                                               | 72.2                                                                                | 0.0                                                                                 | 63.4                                                                                | 61.7                                                                                | 0.0                                                                                 | 0.0                                                                                 |   |
| LnGrp LOS                    | E                                                                                 | C                                                                                 | C                                                                                 | E                                                                                 | B                                                                                 | A                                                                                 | E                                                                                   | A                                                                                   | E                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |   |
| Approach Vol, veh/h          | 3090                                                                              |                                                                                   |                                                                                   | 2757                                                                              |                                                                                   |                                                                                   | 170                                                                                 |                                                                                     |                                                                                     | 32                                                                                  |                                                                                     |                                                                                     | A |
| Approach Delay, s/veh        | 25.0                                                                              |                                                                                   |                                                                                   | 14.3                                                                              |                                                                                   |                                                                                   | 65.2                                                                                |                                                                                     |                                                                                     | 61.7                                                                                |                                                                                     |                                                                                     |   |
| Approach LOS                 | C                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | E                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |   |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Phs Duration (G+Y+Rc), s     | 10.2                                                                              | 84.1                                                                              | 8.1                                                                               | 17.6                                                                              | 6.7                                                                               | 87.6                                                                              | 9.1                                                                                 | 16.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Change Period (Y+Rc), s      | 4.6                                                                               | 6.5                                                                               | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 6.5                                                                               | 4.6                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Max Green Setting (Gmax), s  | 5.6                                                                               | 66.5                                                                              | 6.6                                                                               | 21.0                                                                              | 5.0                                                                               | 67.1                                                                              | 5.0                                                                                 | 22.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Max Q Clear Time (g_c+I1), s | 6.7                                                                               | 59.5                                                                              | 4.4                                                                               | 0.0                                                                               | 3.1                                                                               | 43.0                                                                              | 4.1                                                                                 | 11.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Green Ext Time (p_c), s      | 0.0                                                                               | 6.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 22.3                                                                              | 0.0                                                                                 | 0.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 21.5 |
| HCM 6th LOS        | C    |

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/23/2019

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 160                                                                               | 1996                                                                              | 589                                                                               | 212                                                                               | 1690                                                                              | 158                                                                               | 474                                                                                | 398                                                                                 | 240                                                                                 | 205                                                                                 | 758                                                                                 | 336                                                                                 |
| Future Volume (vph)  | 160                                                                               | 1996                                                                              | 589                                                                               | 212                                                                               | 1690                                                                              | 158                                                                               | 474                                                                                | 398                                                                                 | 240                                                                                 | 205                                                                                 | 758                                                                                 | 336                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                                | 10.0                                                                                | 5.0                                                                                 | 5.0                                                                                 | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                                | 15.8                                                                                | 8.7                                                                                 | 8.7                                                                                 | 49.8                                                                                | 49.8                                                                                |
| Total Split (s)      | 12.0                                                                              | 46.0                                                                              | 46.0                                                                              | 10.0                                                                              | 44.0                                                                              | 44.0                                                                              | 12.0                                                                               | 52.0                                                                                | 10.0                                                                                | 12.0                                                                                | 52.0                                                                                | 52.0                                                                                |
| Total Split (%)      | 10.0%                                                                             | 38.3%                                                                             | 38.3%                                                                             | 8.3%                                                                              | 36.7%                                                                             | 36.7%                                                                             | 10.0%                                                                              | 43.3%                                                                               | 8.3%                                                                                | 10.0%                                                                               | 43.3%                                                                               | 43.3%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                                | 4.8                                                                                 | 3.2                                                                                 | 3.2                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                                | 1.0                                                                                 | 0.5                                                                                 | 0.5                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                                | 5.8                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                                | Lag                                                                                 | Lead                                                                                | Lead                                                                                | Lead                                                                                | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                               | Max                                                                                 | None                                                                                | None                                                                                | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

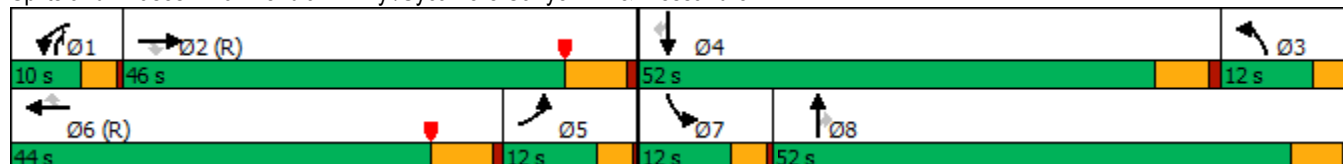
Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/23/2019

|                              |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |  |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                     | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |  |   |    |  |   |   |   |   |   |  |
| Traffic Volume (veh/h)       | 160                                                                               | 1996                                                                                                                                                                                                                                                  | 589                                                                               | 212                                                                                                                                                                 | 1690                                                                                                                                                                                                                                                  | 158                                                                               | 474                                                                                                                                                                     | 398                                                                                                                                                                     | 240                                                                                                                                                                     | 205                                                                                                                                                                     | 758                                                                                                                                                                     | 336                                                                                 |
| Future Volume (veh/h)        | 160                                                                               | 1996                                                                                                                                                                                                                                                  | 589                                                                               | 212                                                                                                                                                                 | 1690                                                                                                                                                                                                                                                  | 158                                                                               | 474                                                                                                                                                                     | 398                                                                                                                                                                     | 240                                                                                                                                                                     | 205                                                                                                                                                                     | 758                                                                                                                                                                     | 336                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                     | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                         | No                                                                                                                                                                      |                                                                                                                                                                         |                                                                                                                                                                         | No                                                                                                                                                                      |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 178                                                                               | 2218                                                                                                                                                                                                                                                  | 654                                                                               | 236                                                                                                                                                                 | 1878                                                                                                                                                                                                                                                  | 176                                                                               | 527                                                                                                                                                                     | 442                                                                                                                                                                     | 267                                                                                                                                                                     | 228                                                                                                                                                                     | 842                                                                                                                                                                     | 373                                                                                 |
| Peak Hour Factor             | 0.90                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                                                                                                                                                                                                  | 0.90                                                                              | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 2128                                                                              | 7569                                                                                                                                                                                                                                                  | 2350                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1453                                                                                                                                                                    | 1289                                                                                                                                                                    | 243                                                                                                                                                                     | 1390                                                                                                                                                                    | 620                                                                                 |
| Arrive On Green              | 0.39                                                                              | 0.48                                                                                                                                                                                                                                                  | 0.48                                                                              | 0.05                                                                                                                                                                | 0.31                                                                                                                                                                                                                                                  | 0.31                                                                              | 0.07                                                                                                                                                                    | 0.40                                                                                                                                                                    | 0.40                                                                                                                                                                    | 0.07                                                                                                                                                                    | 0.38                                                                                                                                                                    | 0.38                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                    | 3610                                                                                                                                                                    | 2834                                                                                                                                                                    | 3510                                                                                                                                                                    | 3610                                                                                                                                                                    | 1610                                                                                |
| Grp Volume(v), veh/h         | 178                                                                               | 2218                                                                                                                                                                                                                                                  | 654                                                                               | 236                                                                                                                                                                 | 1878                                                                                                                                                                                                                                                  | 176                                                                               | 527                                                                                                                                                                     | 442                                                                                                                                                                     | 267                                                                                                                                                                     | 228                                                                                                                                                                     | 842                                                                                                                                                                     | 373                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                    | 1805                                                                                                                                                                    | 1417                                                                                                                                                                    | 1755                                                                                                                                                                    | 1805                                                                                                                                                                    | 1610                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 6.3                                                                                                                                                                 | 37.5                                                                                                                                                                                                                                                  | 24.8                                                                              | 8.3                                                                                                                                                                     | 10.0                                                                                                                                                                    | 6.8                                                                                                                                                                     | 7.8                                                                                                                                                                     | 22.4                                                                                                                                                                    | 22.3                                                                                |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 6.3                                                                                                                                                                 | 37.5                                                                                                                                                                                                                                                  | 24.8                                                                              | 8.3                                                                                                                                                                     | 10.0                                                                                                                                                                    | 6.8                                                                                                                                                                     | 7.8                                                                                                                                                                     | 22.4                                                                                                                                                                    | 22.3                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 2128                                                                              | 7569                                                                                                                                                                                                                                                  | 2350                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1453                                                                                                                                                                    | 1289                                                                                                                                                                    | 243                                                                                                                                                                     | 1390                                                                                                                                                                    | 620                                                                                 |
| V/C Ratio(X)                 | 0.08                                                                              | 0.29                                                                                                                                                                                                                                                  | 0.28                                                                              | 1.28                                                                                                                                                                | 1.16                                                                                                                                                                                                                                                  | 0.35                                                                              | 2.17                                                                                                                                                                    | 0.30                                                                                                                                                                    | 0.21                                                                                                                                                                    | 0.94                                                                                                                                                                    | 0.61                                                                                                                                                                    | 0.60                                                                                |
| Avail Cap(c_a), veh/h        | 2128                                                                              | 7569                                                                                                                                                                                                                                                  | 2350                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1453                                                                                                                                                                    | 1289                                                                                                                                                                    | 243                                                                                                                                                                     | 1390                                                                                                                                                                    | 620                                                                                 |
| HCM Platoon Ratio            | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(l)           | 0.29                                                                              | 0.29                                                                                                                                                                                                                                                  | 0.29                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 56.8                                                                                                                                                                | 41.2                                                                                                                                                                                                                                                  | 190.3                                                                             | 55.8                                                                                                                                                                    | 24.4                                                                                                                                                                    | 19.7                                                                                                                                                                    | 55.6                                                                                                                                                                    | 29.6                                                                                                                                                                    | 29.5                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 161.2                                                                                                                                                               | 78.7                                                                                                                                                                                                                                                  | 1.9                                                                               | 540.1                                                                                                                                                                   | 0.5                                                                                                                                                                     | 0.4                                                                                                                                                                     | 40.8                                                                                                                                                                    | 2.0                                                                                                                                                                     | 4.3                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 6.8                                                                                                                                                                 | 27.0                                                                                                                                                                                                                                                  | 10.6                                                                              | 21.8                                                                                                                                                                    | 4.2                                                                                                                                                                     | 2.2                                                                                                                                                                     | 4.7                                                                                                                                                                     | 9.7                                                                                                                                                                     | 9.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 218.0                                                                                                                                                               | 120.0                                                                                                                                                                                                                                                 | 192.3                                                                             | 596.0                                                                                                                                                                   | 24.9                                                                                                                                                                    | 20.0                                                                                                                                                                    | 96.4                                                                                                                                                                    | 31.6                                                                                                                                                                    | 33.8                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | F                                                                                                                                                                   | F                                                                                                                                                                                                                                                     | F                                                                                 | F                                                                                                                                                                       | C                                                                                                                                                                       | C                                                                                                                                                                       | F                                                                                                                                                                       | C                                                                                                                                                                       | C                                                                                   |
| Approach Vol, veh/h          | 3050                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2290                                                                                                                                                                |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         | 1236                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         | 1443                                                                                                                                                                    |                                                                                     |
| Approach Delay, s/veh        | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 135.6                                                                                                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         | 267.4                                                                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 42.4                                                                                                                                                                    |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | F                                                                                                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         | F                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | D                                                                                                                                                                       |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 7                                                                                                                                                                       | 8                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.0                                                                              | 183.7                                                                                                                                                                                                                                                 | 14.1                                                                              | 52.0                                                                                                                                                                | 149.7                                                                                                                                                                                                                                                 | 44.0                                                                              | 12.0                                                                                                                                                                    | 54.1                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 5.8                                                                               | * 5.8                                                                                                                                                               | 6.5                                                                                                                                                                                                                                                   | * 6.5                                                                             | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 6.3                                                                               | 39.5                                                                                                                                                                                                                                                  | 8.3                                                                               | * 46                                                                                                                                                                | 8.3                                                                                                                                                                                                                                                   | * 38                                                                              | 8.3                                                                                                                                                                     | 46.2                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 8.3                                                                               | 2.0                                                                                                                                                                                                                                                   | 10.3                                                                              | 24.4                                                                                                                                                                | 2.0                                                                                                                                                                                                                                                   | 39.5                                                                              | 9.8                                                                                                                                                                     | 12.0                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 33.2                                                                                                                                                                                                                                                  | 0.0                                                                               | 6.9                                                                                                                                                                 | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 4.0                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 87.6                                                                              |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | F                                                                                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↱     | ↱     |
| Traffic Volume (vph) | 1894  | 1668  | 281   | 0     | 450   |
| Future Volume (vph)  | 1894  | 1668  | 281   | 0     | 450   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 58.0  | 58.0  | 27.0  | 27.0  | 27.0  |
| Total Split (%)      | 68.2% | 68.2% | 31.8% | 31.8% | 31.8% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 33 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.

|          |      |      |
|----------|------|------|
| → Ø2 (R) | 58 s | 27 s |
| ← Ø6 (R) | 58 s |      |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |                                                                                   |    |                                                                                   |                                                                                   |    |                                                                                   |                                                                                     |                                                                                     |                                                                                     |  |   |  |
| Traffic Volume (veh/h)       | 0                                                                                 | 1894                                                                                                                                                                                                                                                  | 549                                                                               | 0                                                                                 | 1668                                                                                                                                                                                                                                                  | 153                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 281                                                                                 | 0                                                                                                                                                                       | 450                                                                                 |
| Future Volume (veh/h)        | 0                                                                                 | 1894                                                                                                                                                                                                                                                  | 549                                                                               | 0                                                                                 | 1668                                                                                                                                                                                                                                                  | 153                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 281                                                                                 | 0                                                                                                                                                                       | 450                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | No                                                                                                                                                                      |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              |                                                                                     |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 0                                                                                 | 2015                                                                                                                                                                                                                                                  | 547                                                                               | 0                                                                                 | 1774                                                                                                                                                                                                                                                  | 161                                                                               |                                                                                     |                                                                                     |                                                                                     | 427                                                                                 | 0                                                                                                                                                                       | 237                                                                                 |
| Peak Hour Factor             | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.94                                                                                | 0.94                                                                                                                                                                    | 0.94                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 0                                                                                 | 2837                                                                                                                                                                                                                                                  | 728                                                                               | 0                                                                                 | 3349                                                                                                                                                                                                                                                  | 303                                                                               |                                                                                     |                                                                                     |                                                                                     | 663                                                                                 | 0                                                                                                                                                                       | 295                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.69                                                                                                                                                                                                                                                  | 0.69                                                                              | 0.00                                                                              | 0.69                                                                                                                                                                                                                                                  | 0.69                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.18                                                                                | 0.00                                                                                                                                                                    | 0.18                                                                                |
| Sat Flow, veh/h              | 0                                                                                 | 4263                                                                                                                                                                                                                                                  | 1050                                                                              | 0                                                                                 | 5002                                                                                                                                                                                                                                                  | 437                                                                               |                                                                                     |                                                                                     |                                                                                     | 3619                                                                                | 0                                                                                                                                                                       | 1608                                                                                |
| Grp Volume(v), veh/h         | 0                                                                                 | 1685                                                                                                                                                                                                                                                  | 877                                                                               | 0                                                                                 | 1268                                                                                                                                                                                                                                                  | 667                                                                               |                                                                                     |                                                                                     |                                                                                     | 427                                                                                 | 0                                                                                                                                                                       | 237                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1683                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1810                                                                              |                                                                                     |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                                                                                                       | 1608                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 24.8                                                                                                                                                                                                                                                  | 28.4                                                                              | 0.0                                                                               | 15.1                                                                                                                                                                                                                                                  | 15.2                                                                              |                                                                                     |                                                                                     |                                                                                     | 9.3                                                                                 | 0.0                                                                                                                                                                     | 12.0                                                                                |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 24.8                                                                                                                                                                                                                                                  | 28.4                                                                              | 0.0                                                                               | 15.1                                                                                                                                                                                                                                                  | 15.2                                                                              |                                                                                     |                                                                                     |                                                                                     | 9.3                                                                                 | 0.0                                                                                                                                                                     | 12.0                                                                                |
| Prop In Lane                 | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.62                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.24                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 0                                                                                 | 2397                                                                                                                                                                                                                                                  | 1167                                                                              | 0                                                                                 | 2397                                                                                                                                                                                                                                                  | 1255                                                                              |                                                                                     |                                                                                     |                                                                                     | 663                                                                                 | 0                                                                                                                                                                       | 295                                                                                 |
| V/C Ratio(X)                 | 0.00                                                                              | 0.70                                                                                                                                                                                                                                                  | 0.75                                                                              | 0.00                                                                              | 0.53                                                                                                                                                                                                                                                  | 0.53                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.64                                                                                | 0.00                                                                                                                                                                    | 0.80                                                                                |
| Avail Cap(c_a), veh/h        | 0                                                                                 | 2397                                                                                                                                                                                                                                                  | 1167                                                                              | 0                                                                                 | 2397                                                                                                                                                                                                                                                  | 1255                                                                              |                                                                                     |                                                                                     |                                                                                     | 937                                                                                 | 0                                                                                                                                                                       | 416                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(I)           | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 0.57                                                                                                                                                                                                                                                  | 0.57                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 7.8                                                                                                                                                                                                                                                   | 8.4                                                                               | 0.0                                                                               | 6.3                                                                                                                                                                                                                                                   | 6.3                                                                               |                                                                                     |                                                                                     |                                                                                     | 32.1                                                                                | 0.0                                                                                                                                                                     | 33.3                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 1.8                                                                                                                                                                                                                                                   | 4.5                                                                               | 0.0                                                                               | 0.5                                                                                                                                                                                                                                                   | 0.9                                                                               |                                                                                     |                                                                                     |                                                                                     | 1.1                                                                                 | 0.0                                                                                                                                                                     | 7.5                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 5.9                                                                                                                                                                                                                                                   | 7.4                                                                               | 0.0                                                                               | 3.4                                                                                                                                                                                                                                                   | 3.7                                                                               |                                                                                     |                                                                                     |                                                                                     | 3.9                                                                                 | 0.0                                                                                                                                                                     | 5.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 9.6                                                                                                                                                                                                                                                   | 12.8                                                                              | 0.0                                                                               | 6.8                                                                                                                                                                                                                                                   | 7.3                                                                               |                                                                                     |                                                                                     |                                                                                     | 33.2                                                                                | 0.0                                                                                                                                                                     | 40.8                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                                                                                                                                                                                     | B                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                     |                                                                                     |                                                                                     | C                                                                                   | A                                                                                                                                                                       | D                                                                                   |
| Approach Vol, veh/h          | 2562                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1935                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 664                                                                                 |                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        | 10.7                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 7.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 35.9                                                                                |                                                                                                                                                                         |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 4                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 64.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 20.6                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 64.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 52.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 22.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 52.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 30.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 14.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 17.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 17.6                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 16.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 12.5                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | B                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBL   | EBT   | WBT   | WBR   | NBL   | NBT   | NBR   |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations  |       |       |       |       |       |       |       |
| Traffic Volume (vph) | 288   | 1825  | 1209  | 283   | 699   | 12    | 332   |
| Future Volume (vph)  | 288   | 1825  | 1209  | 283   | 699   | 12    | 332   |
| Turn Type            | Prot  | NA    | NA    | Perm  | Split | NA    | Perm  |
| Protected Phases     | 5     | 2     | 6     |       | 8     | 8     |       |
| Permitted Phases     |       |       |       | 6     |       |       | 8     |
| Detector Phase       | 5     | 2     | 6     | 6     | 8     | 8     | 8     |
| Switch Phase         |       |       |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 9.5   | 10.5  | 33.5  | 33.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 23.0  | 52.0  | 33.5  | 33.5  | 33.0  | 33.0  | 33.0  |
| Total Split (%)      | 25.7% | 58.1% | 37.4% | 37.4% | 36.9% | 36.9% | 36.9% |
| Yellow Time (s)      | 3.5   | 4.5   | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.5   | 5.5   | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             | Lead  |       | Lag   | Lag   |       |       |       |
| Lead-Lag Optimize?   | Yes   |       | Yes   | Yes   |       |       |       |
| Recall Mode          | None  | C-Max | C-Max | C-Max | Max   | Max   | Max   |

### Intersection Summary

Cycle Length: 89.5

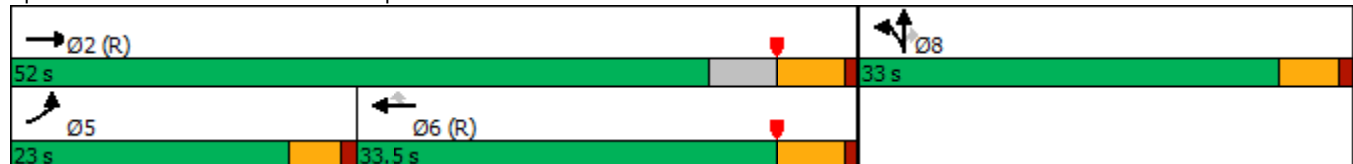
Actuated Cycle Length: 89.5

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 8: I-215 NB Ramps & Alessandro Bl. 05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |   |                                                                                      |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)       | 288                                                                               | 1825                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1209                                                                                                                                                                                                                                                  | 283                                                                               | 699                                                                                 | 12                                                                                                                                                                      | 332                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 288                                                                               | 1825                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1209                                                                                                                                                                                                                                                  | 283                                                                               | 699                                                                                 | 12                                                                                                                                                                      | 332                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h         | 306                                                                               | 1941                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1286                                                                                                                                                                                                                                                  | 185                                                                               | 807                                                                                 | 0                                                                                                                                                                       | 128                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor             | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                                | 0.94                                                                                                                                                                    | 0.94                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                   | 341                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1731                                                                                                                                                                                                                                                  | 526                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green              | 0.19                                                                              | 0.57                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 0.31                                                                                | 0.00                                                                                                                                                                    | 0.31                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h              | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1576                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h         | 306                                                                               | 1941                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1286                                                                                                                                                                                                                                                  | 185                                                                               | 807                                                                                 | 0                                                                                                                                                                       | 128                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1576                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 14.9                                                                              | 23.0                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 19.8                                                                                                                                                                                                                                                  | 8.0                                                                               | 17.8                                                                                | 0.0                                                                                                                                                                     | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 14.9                                                                              | 23.0                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 19.8                                                                                                                                                                                                                                                  | 8.0                                                                               | 17.8                                                                                | 0.0                                                                                                                                                                     | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 341                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1731                                                                                                                                                                                                                                                  | 526                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.90                                                                              | 0.65                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.74                                                                                                                                                                                                                                                  | 0.35                                                                              | 0.72                                                                                | 0.00                                                                                                                                                                    | 0.26                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 372                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1731                                                                                                                                                                                                                                                  | 526                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.54                                                                              | 0.54                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 35.7                                                                              | 13.2                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 26.6                                                                                                                                                                                                                                                  | 22.6                                                                              | 27.5                                                                                | 0.0                                                                                                                                                                     | 23.2                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 13.5                                                                              | 0.6                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 2.9                                                                                                                                                                                                                                                   | 1.8                                                                               | 3.9                                                                                 | 0.0                                                                                                                                                                     | 1.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 7.3                                                                               | 7.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 7.7                                                                                                                                                                                                                                                   | 2.9                                                                               | 7.7                                                                                 | 0.0                                                                                                                                                                     | 2.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 49.1                                                                              | 13.8                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 29.5                                                                                                                                                                                                                                                  | 24.5                                                                              | 31.4                                                                                | 0.0                                                                                                                                                                     | 24.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | D                                                                                 | B                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | C                                                                                 | C                                                                                   | A                                                                                                                                                                       | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 2247                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1471                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 935                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 18.6                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 28.9                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 30.5                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 57.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 21.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 35.5                                                                                |                                                                                                                                                                         |                                                                                     | 33.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                                 |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 46.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 18.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 28.0                                                                                |                                                                                                                                                                         |                                                                                     | 28.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 25.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 16.9                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 21.8                                                                                |                                                                                                                                                                         |                                                                                     | 19.8                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 13.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.1                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.0                                                                                 |                                                                                                                                                                         |                                                                                     | 2.4                                                                                 |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 24.2                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**APPENDIX 6.2:**

**OPENING YEAR CUMULATIVE (2023) WITH PROJECT CONDITIONS INTERSECTION  
OPERATIONS ANALYSIS WORKSHEETS**

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| Intersection             |                                                                                   |          |                                                                                   |        |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 1.6                                                                               |          |                                                                                   |        |      |                                                                                   |
| Movement                 | WBL                                                                               | WBR      | NBT                                                                               | NBR    | SBL  | SBT                                                                               |
| Lane Configurations      |  |          |  |        |      |  |
| Traffic Vol, veh/h       | 6                                                                                 | 0        | 2                                                                                 | 19     | 0    | 6                                                                                 |
| Future Vol, veh/h        | 6                                                                                 | 0        | 2                                                                                 | 19     | 0    | 6                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0        | 0                                                                                 | 0      | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop     | Free                                                                              | Free   | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None     | -                                                                                 | None   | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -        | -                                                                                 | -      | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -        | 0                                                                                 | -      | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -        | 0                                                                                 | -      | -    | 0                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92       | 92                                                                                | 92     | 92   | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0        | 0                                                                                 | 0      | 0    | 0                                                                                 |
| Mvmt Flow                | 7                                                                                 | 0        | 2                                                                                 | 21     | 0    | 7                                                                                 |
| Major/Minor              | Minor1                                                                            | Major1   |                                                                                   | Major2 |      |                                                                                   |
| Conflicting Flow All     | 20                                                                                | 13       | 0                                                                                 | 0      | 23   | 0                                                                                 |
| Stage 1                  | 13                                                                                | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | 7                                                                                 | -        | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy            | 6.4                                                                               | 6.2      | -                                                                                 | -      | 4.1  | -                                                                                 |
| Critical Hdwy Stg 1      | 5.4                                                                               | -        | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy Stg 2      | 5.4                                                                               | -        | -                                                                                 | -      | -    | -                                                                                 |
| Follow-up Hdwy           | 3.5                                                                               | 3.3      | -                                                                                 | -      | 2.2  | -                                                                                 |
| Pot Cap-1 Maneuver       | 1002                                                                              | 1073     | -                                                                                 | -      | 1605 | -                                                                                 |
| Stage 1                  | 1015                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | 1021                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Platoon blocked, %       |                                                                                   |          | -                                                                                 | -      |      | -                                                                                 |
| Mov Cap-1 Maneuver       | 1002                                                                              | 1073     | -                                                                                 | -      | 1605 | -                                                                                 |
| Mov Cap-2 Maneuver       | 1002                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 1                  | 1015                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | 1021                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Approach                 | WB                                                                                | NB       |                                                                                   | SB     |      |                                                                                   |
| HCM Control Delay, s     | 8.6                                                                               | 0        |                                                                                   | 0      |      |                                                                                   |
| HCM LOS                  | A                                                                                 |          |                                                                                   |        |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBT                                                                               | NBRWBLn1 |                                                                                   | SBL    | SBT  |                                                                                   |
| Capacity (veh/h)         | -                                                                                 | - 1002   |                                                                                   | 1605   | -    |                                                                                   |
| HCM Lane V/C Ratio       | -                                                                                 | - 0.007  |                                                                                   | -      | -    |                                                                                   |
| HCM Control Delay (s)    | -                                                                                 | - 8.6    |                                                                                   | 0      | -    |                                                                                   |
| HCM Lane LOS             | -                                                                                 | - A      |                                                                                   | A      | -    |                                                                                   |
| HCM 95th %tile Q(veh)    | -                                                                                 | - 0      |                                                                                   | 0      | -    |                                                                                   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/23/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 12                                                                                | 1561                                                                              | 60                                                                                | 2805                                                                              | 20                                                                                | 68                                                                                | 5                                                                                   | 55                                                                                  | 12                                                                                  | 8                                                                                   | 3                                                                                   |
| Future Volume (vph)  | 12                                                                                | 1561                                                                              | 60                                                                                | 2805                                                                              | 20                                                                                | 68                                                                                | 5                                                                                   | 55                                                                                  | 12                                                                                  | 8                                                                                   | 3                                                                                   |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 68.4                                                                              | 11.0                                                                              | 70.2                                                                              | 70.2                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                |
| Total Split (%)      | 7.7%                                                                              | 57.0%                                                                             | 9.2%                                                                              | 58.5%                                                                             | 58.5%                                                                             | 33.8%                                                                             | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

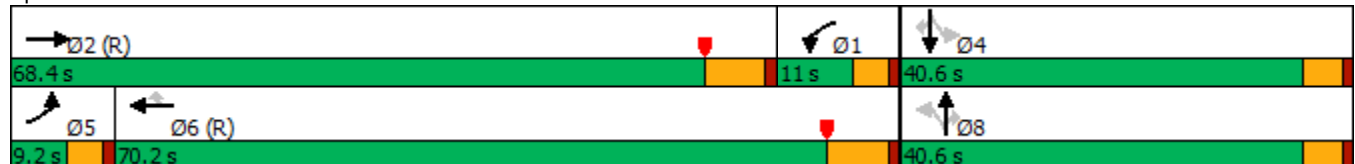
Actuated Cycle Length: 120

Offset: 88 (73%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 2: Barton St. & Alessandro Bl. 05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 12                                                                                | 1561                                                                              | 28                                                                                | 60                                                                                | 2805                                                                              | 20                                                                                | 68                                                                                 | 5                                                                                   | 55                                                                                  | 12                                                                                  | 8                                                                                   | 3                                                                                   |
| Future Volume (veh/h)        | 12                                                                                | 1561                                                                              | 28                                                                                | 60                                                                                | 2805                                                                              | 20                                                                                | 68                                                                                 | 5                                                                                   | 55                                                                                  | 12                                                                                  | 8                                                                                   | 3                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.99                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 13                                                                                | 1678                                                                              | 30                                                                                | 65                                                                                | 3016                                                                              | 22                                                                                | 73                                                                                 | 5                                                                                   | 28                                                                                  | 13                                                                                  | 9                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                              | 0.93                                                                               | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 27                                                                                | 2707                                                                              | 48                                                                                | 538                                                                               | 4242                                                                              | 1317                                                                              | 474                                                                                | 31                                                                                  | 477                                                                                 | 296                                                                                 | 194                                                                                 | 483                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.52                                                                              | 0.52                                                                              | 0.10                                                                              | 0.27                                                                              | 0.27                                                                              | 0.30                                                                               | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5247                                                                              | 94                                                                                | 1810                                                                              | 5187                                                                              | 1610                                                                              | 1388                                                                               | 102                                                                                 | 1590                                                                                | 829                                                                                 | 647                                                                                 | 1610                                                                                |
| Grp Volume(v), veh/h         | 13                                                                                | 1106                                                                              | 602                                                                               | 65                                                                                | 3016                                                                              | 22                                                                                | 78                                                                                 | 0                                                                                   | 28                                                                                  | 22                                                                                  | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1883                                                                              | 1810                                                                              | 1729                                                                              | 1610                                                                              | 1490                                                                               | 0                                                                                   | 1590                                                                                | 1476                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.9                                                                               | 27.3                                                                              | 27.3                                                                              | 3.9                                                                               | 63.0                                                                              | 1.2                                                                               | 0.0                                                                                | 0.0                                                                                 | 1.5                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.9                                                                               | 27.3                                                                              | 27.3                                                                              | 3.9                                                                               | 63.0                                                                              | 1.2                                                                               | 3.8                                                                                | 0.0                                                                                 | 1.5                                                                                 | 3.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.05                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 0.94                                                                               |                                                                                     | 1.00                                                                                | 0.59                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 27                                                                                | 1784                                                                              | 971                                                                               | 538                                                                               | 4242                                                                              | 1317                                                                              | 505                                                                                | 0                                                                                   | 477                                                                                 | 491                                                                                 | 0                                                                                   | 483                                                                                 |
| V/C Ratio(X)                 | 0.49                                                                              | 0.62                                                                              | 0.62                                                                              | 0.12                                                                              | 0.71                                                                              | 0.02                                                                              | 0.15                                                                               | 0.00                                                                                | 0.06                                                                                | 0.04                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 1784                                                                              | 971                                                                               | 538                                                                               | 4242                                                                              | 1317                                                                              | 505                                                                                | 0                                                                                   | 477                                                                                 | 491                                                                                 | 0                                                                                   | 483                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.33                                                                              | 0.33                                                                              | 0.33                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.74                                                                              | 0.74                                                                              | 0.74                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.7                                                                              | 20.7                                                                              | 20.7                                                                              | 39.8                                                                              | 31.0                                                                              | 8.4                                                                               | 30.7                                                                               | 0.0                                                                                 | 29.9                                                                                | 29.8                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 5.1                                                                               | 1.6                                                                               | 3.0                                                                               | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.2                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.4                                                                               | 10.3                                                                              | 11.5                                                                              | 1.7                                                                               | 29.0                                                                              | 0.2                                                                               | 1.8                                                                                | 0.0                                                                                 | 0.6                                                                                 | 0.5                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 63.8                                                                              | 22.3                                                                              | 23.7                                                                              | 39.8                                                                              | 31.8                                                                              | 8.4                                                                               | 31.4                                                                               | 0.0                                                                                 | 30.2                                                                                | 29.9                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | C                                                                                 | C                                                                                 | D                                                                                 | C                                                                                 | A                                                                                 | C                                                                                  | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1721                                                                              |                                                                                   |                                                                                   |                                                                                   | 3103                                                                              |                                                                                   |                                                                                    |                                                                                     | 106                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 23.1                                                                              |                                                                                   |                                                                                   |                                                                                   | 31.8                                                                              |                                                                                   |                                                                                    |                                                                                     | 31.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | C                                                                                 |                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                    |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 43.0                                                                              | 68.4                                                                              |                                                                                   | 40.6                                                                              | 6.0                                                                               | 105.4                                                                             |                                                                                    | 40.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 6.5                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               | * 4.2                                                                             | 6.5                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.8                                                                               | * 62                                                                              |                                                                                   | 36.0                                                                              | * 5                                                                               | 63.7                                                                              |                                                                                    | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.9                                                                               | 29.3                                                                              |                                                                                   | 5.8                                                                               | 2.9                                                                               | 65.0                                                                              |                                                                                    | 5.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 19.0                                                                              |                                                                                   | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    | 0.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 28.7 |
| HCM 6th LOS        | C    |

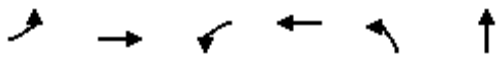
Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/23/2019

|                      |  |                                                                                   |                                                                                   |                                                                                   |       |                                                                                   |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL   | NBT                                                                               | Ø6   |
| Lane Configurations  |  |  |  |  |       |  |      |
| Traffic Volume (vph) | 5                                                                                 | 1603                                                                              | 2                                                                                 | 2852                                                                              | 3     | 0                                                                                 |      |
| Future Volume (vph)  | 5                                                                                 | 1603                                                                              | 2                                                                                 | 2852                                                                              | 3     | 0                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm  | NA                                                                                |      |
| Protected Phases     | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |       | 2                                                                                 | 6    |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2     |                                                                                   |      |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 2     | 2                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |       |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0  | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.2                                                                               | 23.5                                                                              | 9.2                                                                               | 23.5                                                                              | 14.6  | 14.6                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 95.0                                                                              | 10.0                                                                              | 95.0                                                                              | 15.0  | 15.0                                                                              | 15.0 |
| Total Split (%)      | 8.3%                                                                              | 79.2%                                                                             | 8.3%                                                                              | 79.2%                                                                             | 12.5% | 12.5%                                                                             | 13%  |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 3.6   | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0   | 1.0                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |       | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               |       | 4.6                                                                               |      |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               |       |                                                                                   |      |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |       |                                                                                   |      |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | None  | None                                                                              | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 81 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 5                                                                                 | 1603                                                                              | 5                                                                                 | 2                                                                                 | 2852                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1603                                                                              | 5                                                                                 | 2                                                                                 | 2852                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 3                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1742                                                                              | 5                                                                                 | 2                                                                                 | 3100                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 3938                                                                              | 11                                                                                | 195                                                                               | 4451                                                                              | 0                                                                                 | 71                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 15                                                                                  | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 1.00                                                                              | 1.00                                                                              | 0.11                                                                              | 0.86                                                                              | 0.00                                                                              | 0.01                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5340                                                                              | 15                                                                                | 1810                                                                              | 5358                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Grp Volume(v), veh/h         | 5                                                                                 | 1128                                                                              | 619                                                                               | 2                                                                                 | 3100                                                                              | 0                                                                                 | 3                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1897                                                                              | 1810                                                                              | 1729                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.3                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 25.3                                                                              | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.3                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 25.3                                                                              | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                               |                                                                                     | 0.00                                                                                | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 2550                                                                              | 1399                                                                              | 195                                                                               | 4451                                                                              | 0                                                                                 | 71                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 15                                                                                  | 0                                                                                   |
| V/C Ratio(X)                 | 0.43                                                                              | 0.44                                                                              | 0.44                                                                              | 0.01                                                                              | 0.70                                                                              | 0.00                                                                              | 0.04                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 87                                                                                | 2550                                                                              | 1399                                                                              | 195                                                                               | 4451                                                                              | 0                                                                                 | 185                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 165                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 59.0                                                                              | 0.0                                                                               | 0.0                                                                               | 47.8                                                                              | 3.0                                                                               | 0.0                                                                               | 59.2                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 7.1                                                                               | 0.4                                                                               | 0.8                                                                               | 0.0                                                                               | 0.9                                                                               | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 0.2                                                                               | 0.3                                                                               | 0.1                                                                               | 2.3                                                                               | 0.0                                                                               | 0.1                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 66.1                                                                              | 0.4                                                                               | 0.8                                                                               | 47.8                                                                              | 3.9                                                                               | 0.0                                                                               | 59.4                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                  | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1752                                                                              |                                                                                   |                                                                                   |                                                                                   | 3102                                                                              |                                                                                   | 3                                                                                  |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Approach Delay, s/veh        | 0.7                                                                               |                                                                                   |                                                                                   |                                                                                   | 3.9                                                                               |                                                                                   | 59.4                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   | E                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 5.6                                                                               |                                                                                   | 19.4                                                                              | 95.0                                                                              |                                                                                   | 5.6                                                                               |                                                                                    | 5.0                                                                                 | 109.5                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 6.5                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               |                                                                                    | * 4.2                                                                               | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                   | 5.8                                                                               | * 89                                                                              |                                                                                   | 10.4                                                                              |                                                                                    | * 5.8                                                                               | 88.5                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.2                                                                               |                                                                                   | 2.1                                                                               | 2.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 2.3                                                                                 | 27.3                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 29.4                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 56.9                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 2.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection               |             |                        |       |        |                            |       |        |      |                                |           |      |      |
|----------------------------|-------------|------------------------|-------|--------|----------------------------|-------|--------|------|--------------------------------|-----------|------|------|
| Int Delay, s/veh           | 8.9         |                        |       |        |                            |       |        |      |                                |           |      |      |
| Movement                   | EBL         | EBT                    | EBR   | WBL    | WBT                        | WBR   | NBL    | NBT  | NBR                            | SBL       | SBT  | SBR  |
| Lane Configurations        | ↱ ↑↑↑       |                        |       | ↱ ↑↑↑  |                            |       | ↱      | ↱    |                                | ↱         | ↱    |      |
| Traffic Vol, veh/h         | 4           | 1595                   | 8     | 13     | 2851                       | 35    | 3      | 0    | 15                             | 11        | 0    | 1    |
| Future Vol, veh/h          | 4           | 1595                   | 8     | 13     | 2851                       | 35    | 3      | 0    | 15                             | 11        | 0    | 1    |
| Conflicting Peds, #/hr     | 0           | 0                      | 0     | 0      | 0                          | 0     | 0      | 0    | 0                              | 0         | 0    | 0    |
| Sign Control               | Free        | Free                   | Free  | Free   | Free                       | Free  | Stop   | Stop | Stop                           | Stop      | Stop | Stop |
| RT Channelized             | -           | -                      | None  | -      | -                          | None  | -      | -    | None                           | -         | -    | None |
| Storage Length             | 155         | -                      | -     | 155    | -                          | -     | 0      | -    | -                              | 0         | -    | -    |
| Veh in Median Storage, #   | -           | 0                      | -     | -      | 0                          | -     | -      | 0    | -                              | -         | 0    | -    |
| Grade, %                   | -           | 0                      | -     | -      | 0                          | -     | -      | 0    | -                              | -         | 0    | -    |
| Peak Hour Factor           | 92          | 92                     | 92    | 92     | 92                         | 92    | 92     | 92   | 92                             | 92        | 92   | 92   |
| Heavy Vehicles, %          | 0           | 0                      | 0     | 0      | 0                          | 0     | 0      | 0    | 0                              | 0         | 0    | 0    |
| Mvmt Flow                  | 4           | 1734                   | 9     | 14     | 3099                       | 38    | 3      | 0    | 16                             | 12        | 0    | 1    |
|                            |             |                        |       |        |                            |       |        |      |                                |           |      |      |
| Major/Minor                | Major1      |                        |       | Major2 |                            |       | Minor1 |      |                                | Minor2    |      |      |
| Conflicting Flow All       | 3137        | 0                      | 0     | 1743   | 0                          | 0     | 3015   | 4912 | 872                            | 3848      | 4897 | 1569 |
| Stage 1                    | -           | -                      | -     | -      | -                          | -     | 1747   | 1747 | -                              | 3146      | 3146 | -    |
| Stage 2                    | -           | -                      | -     | -      | -                          | -     | 1268   | 3165 | -                              | 702       | 1751 | -    |
| Critical Hdwy              | 5.3         | -                      | -     | 5.3    | -                          | -     | 6.4    | 6.5  | 7.1                            | 6.4       | 6.5  | 7.1  |
| Critical Hdwy Stg 1        | -           | -                      | -     | -      | -                          | -     | 7.3    | 5.5  | -                              | 7.3       | 5.5  | -    |
| Critical Hdwy Stg 2        | -           | -                      | -     | -      | -                          | -     | 6.7    | 5.5  | -                              | 6.7       | 5.5  | -    |
| Follow-up Hdwy             | 3.1         | -                      | -     | 3.1    | -                          | -     | 3.8    | 4    | 3.9                            | 3.8       | 4    | 3.9  |
| Pot Cap-1 Maneuver         | 33          | -                      | -     | 172    | -                          | -     | 15     | 1    | 256                            | ~ 4       | 1    | 87   |
| Stage 1                    | -           | -                      | -     | -      | -                          | -     | 60     | 141  | -                              | ~ 6       | 27   | -    |
| Stage 2                    | -           | -                      | -     | -      | -                          | -     | 162    | 26   | -                              | 363       | 141  | -    |
| Platoon blocked, %         |             | -                      | -     |        | -                          | -     |        |      |                                |           |      |      |
| Mov Cap-1 Maneuver         | 33          | -                      | -     | 172    | -                          | -     | 13     | 1    | 256                            | ~ 3       | 1    | 87   |
| Mov Cap-2 Maneuver         | -           | -                      | -     | -      | -                          | -     | 13     | 1    | -                              | ~ 3       | 1    | -    |
| Stage 1                    | -           | -                      | -     | -      | -                          | -     | 53     | 124  | -                              | ~ 5       | 25   | -    |
| Stage 2                    | -           | -                      | -     | -      | -                          | -     | 147    | 24   | -                              | 299       | 124  | -    |
|                            |             |                        |       |        |                            |       |        |      |                                |           |      |      |
| Approach                   | EB          |                        |       | WB     |                            |       | NB     |      |                                | SB        |      |      |
| HCM Control Delay, s       | 0.3         |                        |       | 0.1    |                            |       | 76.3   |      |                                | \$ 3203.3 |      |      |
| HCM LOS                    |             |                        |       |        |                            |       | F      |      |                                | F         |      |      |
|                            |             |                        |       |        |                            |       |        |      |                                |           |      |      |
| Minor Lane/Major Mvmt      | NBLn1 NBLn2 |                        | EBL   | EBT    | EBR                        | WBL   | WBT    | WBR  | SBLn1                          | SBLn2     |      |      |
| Capacity (veh/h)           | 13          | 256                    | 33    | -      | -                          | 172   | -      | -    | 3                              | 87        |      |      |
| HCM Lane V/C Ratio         | 0.251       | 0.064                  | 0.132 | -      | -                          | 0.082 | -      | -    | 3.986                          | 0.012     |      |      |
| HCM Control Delay (s)      | \$ 357.6    | 20                     | 130   | -      | -                          | 27.8  | -      | -    | \$ 3490.2                      | 46.9      |      |      |
| HCM Lane LOS               | F           | C                      | F     | -      | -                          | D     | -      | -    | F                              | E         |      |      |
| HCM 95th %tile Q(veh)      | 0.7         | 0.2                    | 0.4   | -      | -                          | 0.3   | -      | -    | 2.8                            | 0         |      |      |
| Notes                      |             |                        |       |        |                            |       |        |      |                                |           |      |      |
| ~: Volume exceeds capacity |             | \$: Delay exceeds 300s |       |        | +: Computation Not Defined |       |        |      | *: All major volume in platoon |           |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/23/2019



| Lane Group           | EBL  | EBT   | WBL   | WBT   | WBR   | NBL  | NBR   | SBL  | SBR   |
|----------------------|------|-------|-------|-------|-------|------|-------|------|-------|
| Lane Configurations  |      |       |       |       |       |      |       |      |       |
| Traffic Volume (vph) | 12   | 1591  | 116   | 3033  | 38    | 12   | 45    | 22   | 15    |
| Future Volume (vph)  | 12   | 1591  | 116   | 3033  | 38    | 12   | 45    | 22   | 15    |
| Turn Type            | Prot | NA    | Prot  | NA    | Perm  | Prot | Perm  | Prot | Perm  |
| Protected Phases     | 5    | 2     | 1     | 6     |       | 3    |       | 7    |       |
| Permitted Phases     |      |       |       |       | 6     |      | 8     |      | 4     |
| Detector Phase       | 5    | 2     | 1     | 6     | 6     | 3    | 8     | 7    | 4     |
| Switch Phase         |      |       |       |       |       |      |       |      |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0   | 10.0  | 10.0  | 5.0  | 10.0  | 5.0  | 10.0  |
| Minimum Split (s)    | 9.6  | 16.5  | 9.6   | 30.5  | 30.5  | 9.6  | 26.6  | 9.6  | 14.6  |
| Total Split (s)      | 9.6  | 63.2  | 20.4  | 74.0  | 74.0  | 9.6  | 26.8  | 9.6  | 26.8  |
| Total Split (%)      | 8.0% | 52.7% | 17.0% | 61.7% | 61.7% | 8.0% | 22.3% | 8.0% | 22.3% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6   | 5.5   | 5.5   | 3.6  | 3.6   | 3.6  | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0  | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   |
| Total Lost Time (s)  | 4.6  | 6.5   | 4.6   | 6.5   | 6.5   | 4.6  | 4.6   | 4.6  | 4.6   |
| Lead/Lag             | Lead | Lag   | Lead  | Lag   | Lag   | Lead | Lag   | Lead | Lag   |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes   | Yes   | Yes   | Yes  | Yes   | Yes  | Yes   |
| Recall Mode          | None | C-Max | None  | None  | None  | None | None  | None | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 77.1 (64%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.

|        |        |       |        |
|--------|--------|-------|--------|
|        |        |       |        |
| Ø1     | Ø2 (R) | Ø3    | Ø4     |
| 20.4 s | 63.2 s | 9.6 s | 26.8 s |
|        |        |       |        |
| Ø5     | Ø6     | Ø7    | Ø8     |
| 9.6 s  | 74 s   | 9.6 s | 26.8 s |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 5: Alessandro Bl. & San Gorgonio Dr. 05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |   |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |   |
| Lane Configurations          |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |   |
| Traffic Volume (veh/h)       | 12                                                                                | 1591                                                                              | 32                                                                                | 116                                                                               | 3033                                                                              | 38                                                                                | 12                                                                                  | 0                                                                                   | 45                                                                                  | 22                                                                                  | 0                                                                                   | 15                                                                                  |   |
| Future Volume (veh/h)        | 12                                                                                | 1591                                                                              | 32                                                                                | 116                                                                               | 3033                                                                              | 38                                                                                | 12                                                                                  | 0                                                                                   | 45                                                                                  | 22                                                                                  | 0                                                                                   | 15                                                                                  |   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |   |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |   |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |   |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |   |
| Adj Flow Rate, veh/h         | 13                                                                                | 1729                                                                              | 35                                                                                | 126                                                                               | 3297                                                                              | 38                                                                                | 13                                                                                  | 0                                                                                   | 49                                                                                  | 24                                                                                  | 0                                                                                   | 0                                                                                   |   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |   |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |   |
| Cap, veh/h                   | 27                                                                                | 3359                                                                              | 68                                                                                | 154                                                                               | 3693                                                                              | 1146                                                                              | 27                                                                                  | 142                                                                                 | 120                                                                                 | 53                                                                                  | 170                                                                                 |                                                                                     |   |
| Arrive On Green              | 0.01                                                                              | 0.64                                                                              | 0.64                                                                              | 0.08                                                                              | 0.71                                                                              | 0.71                                                                              | 0.01                                                                                | 0.00                                                                                | 0.07                                                                                | 0.03                                                                                | 0.00                                                                                | 0.00                                                                                |   |
| Sat Flow, veh/h              | 1810                                                                              | 5233                                                                              | 106                                                                               | 1810                                                                              | 5187                                                                              | 1609                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |   |
| Grp Volume(v), veh/h         | 13                                                                                | 1142                                                                              | 622                                                                               | 126                                                                               | 3297                                                                              | 38                                                                                | 13                                                                                  | 0                                                                                   | 49                                                                                  | 24                                                                                  | 0                                                                                   | 0                                                                                   |   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1881                                                                              | 1810                                                                              | 1729                                                                              | 1609                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |   |
| Q Serve(g_s), s              | 0.9                                                                               | 21.2                                                                              | 21.2                                                                              | 8.2                                                                               | 60.3                                                                              | 0.8                                                                               | 0.9                                                                                 | 0.0                                                                                 | 3.5                                                                                 | 1.6                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Cycle Q Clear(g_c), s        | 0.9                                                                               | 21.2                                                                              | 21.2                                                                              | 8.2                                                                               | 60.3                                                                              | 0.8                                                                               | 0.9                                                                                 | 0.0                                                                                 | 3.5                                                                                 | 1.6                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.06                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |   |
| Lane Grp Cap(c), veh/h       | 27                                                                                | 2219                                                                              | 1207                                                                              | 154                                                                               | 3693                                                                              | 1146                                                                              | 27                                                                                  | 142                                                                                 | 120                                                                                 | 53                                                                                  | 170                                                                                 |                                                                                     |   |
| V/C Ratio(X)                 | 0.49                                                                              | 0.51                                                                              | 0.51                                                                              | 0.82                                                                              | 0.89                                                                              | 0.03                                                                              | 0.49                                                                                | 0.00                                                                                | 0.41                                                                                | 0.45                                                                                | 0.00                                                                                |                                                                                     |   |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2219                                                                              | 1207                                                                              | 238                                                                               | 3693                                                                              | 1146                                                                              | 75                                                                                  | 352                                                                                 | 298                                                                                 | 75                                                                                  | 352                                                                                 |                                                                                     |   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |   |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.09                                                                              | 0.09                                                                              | 0.09                                                                              | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |   |
| Uniform Delay (d), s/veh     | 58.7                                                                              | 11.5                                                                              | 11.5                                                                              | 54.0                                                                              | 13.7                                                                              | 5.1                                                                               | 58.7                                                                                | 0.0                                                                                 | 53.0                                                                                | 57.3                                                                                | 0.0                                                                                 | 0.0                                                                                 |   |
| Incr Delay (d2), s/veh       | 5.1                                                                               | 0.9                                                                               | 1.6                                                                               | 1.2                                                                               | 0.3                                                                               | 0.0                                                                               | 13.3                                                                                | 0.0                                                                                 | 2.2                                                                                 | 5.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| %ile BackOfQ(50%),veh/ln     | 0.4                                                                               | 7.0                                                                               | 7.9                                                                               | 3.6                                                                               | 17.0                                                                              | 0.3                                                                               | 0.5                                                                                 | 0.0                                                                                 | 1.5                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| LnGrp Delay(d),s/veh         | 63.8                                                                              | 12.4                                                                              | 13.1                                                                              | 55.2                                                                              | 14.0                                                                              | 5.1                                                                               | 72.0                                                                                | 0.0                                                                                 | 55.2                                                                                | 63.1                                                                                | 0.0                                                                                 | 0.0                                                                                 |   |
| LnGrp LOS                    | E                                                                                 | B                                                                                 | B                                                                                 | E                                                                                 | B                                                                                 | A                                                                                 | E                                                                                   | A                                                                                   | E                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |   |
| Approach Vol, veh/h          | 1777                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 3461                                                                              |                                                                                     | 62                                                                                  |                                                                                     | 24                                                                                  |                                                                                     |                                                                                     | A |
| Approach Delay, s/veh        | 13.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 15.4                                                                              |                                                                                     | 58.7                                                                                |                                                                                     | 63.1                                                                                |                                                                                     |                                                                                     |   |
| Approach LOS                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |                                                                                     | E                                                                                   |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |   |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Phs Duration (G+Y+Rc), s     | 14.8                                                                              | 83.5                                                                              | 6.4                                                                               | 15.3                                                                              | 6.4                                                                               | 91.9                                                                              | 8.1                                                                                 | 13.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Change Period (Y+Rc), s      | 4.6                                                                               | 6.5                                                                               | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 6.5                                                                               | 4.6                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Max Green Setting (Gmax), s  | 15.8                                                                              | 56.7                                                                              | 5.0                                                                               | 22.2                                                                              | 5.0                                                                               | 67.5                                                                              | 5.0                                                                                 | 22.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Max Q Clear Time (g_c+I1), s | 10.2                                                                              | 23.2                                                                              | 2.9                                                                               | 0.0                                                                               | 2.9                                                                               | 62.3                                                                              | 3.6                                                                                 | 5.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Green Ext Time (p_c), s      | 0.1                                                                               | 20.0                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 5.2                                                                               | 0.0                                                                                 | 0.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| HCM 6th Ctrl Delay           | 15.3                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| HCM 6th LOS                  | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/23/2019

|                      |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |  |                                                                                       |                                                                                      |                                                                                      |                                                                                      |                                                                                      |  |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                     | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations  |  |    |  |   |    |  |   |   |   |   |   |  |
| Traffic Volume (vph) | 154                                                                               | 1175                                                                                                                                                                                                                                                  | 321                                                                               | 243                                                                                                                                                                 | 2426                                                                                                                                                                                                                                                  | 565                                                                               | 590                                                                                                                                                                     | 771                                                                                                                                                                     | 93                                                                                                                                                                      | 132                                                                                                                                                                     | 176                                                                                                                                                                     | 124                                                                                 |
| Future Volume (vph)  | 154                                                                               | 1175                                                                                                                                                                                                                                                  | 321                                                                               | 243                                                                                                                                                                 | 2426                                                                                                                                                                                                                                                  | 565                                                                               | 590                                                                                                                                                                     | 771                                                                                                                                                                     | 93                                                                                                                                                                      | 132                                                                                                                                                                     | 176                                                                                                                                                                     | 124                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                                                                                                                | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | pm+ov                                                                                                                                                                   | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     |                                                                                   | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       | 2                                                                                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                                                                                                         |                                                                                                                                                                         | 8                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 2                                                                                 | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     | 6                                                                                 | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                              | 5.0                                                                                                                                                                 | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                              | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 5.0                                                                                                                                                                     | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                              | 8.7                                                                                                                                                                 | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                              | 8.7                                                                                                                                                                     | 15.8                                                                                                                                                                    | 8.7                                                                                                                                                                     | 8.7                                                                                                                                                                     | 49.8                                                                                                                                                                    | 49.8                                                                                |
| Total Split (s)      | 10.0                                                                              | 46.0                                                                                                                                                                                                                                                  | 46.0                                                                              | 10.4                                                                                                                                                                | 46.4                                                                                                                                                                                                                                                  | 46.4                                                                              | 13.0                                                                                                                                                                    | 49.8                                                                                                                                                                    | 10.4                                                                                                                                                                    | 13.8                                                                                                                                                                    | 50.6                                                                                                                                                                    | 50.6                                                                                |
| Total Split (%)      | 8.3%                                                                              | 38.3%                                                                                                                                                                                                                                                 | 38.3%                                                                             | 8.7%                                                                                                                                                                | 38.7%                                                                                                                                                                                                                                                 | 38.7%                                                                             | 10.8%                                                                                                                                                                   | 41.5%                                                                                                                                                                   | 8.7%                                                                                                                                                                    | 11.5%                                                                                                                                                                   | 42.2%                                                                                                                                                                   | 42.2%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 3.2                                                                                                                                                                 | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 3.2                                                                                                                                                                     | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 0.5                                                                                                                                                                 | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 0.5                                                                                                                                                                     | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                 | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 3.7                                                                                                                                                                     | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                                                                                                                                                                                                   | Lag                                                                               | Lead                                                                                                                                                                | Lag                                                                                                                                                                                                                                                   | Lag                                                                               | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lead                                                                                                                                                                    | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                                                                                                                                                                                                   | Yes                                                                               | Yes                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                   | Yes                                                                               | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | None                                                                                                                                                                | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

|                                                                                        |                                                                                            |                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 10.4 s                                                                                 | 46 s                                                                                       | 13 s                                                                                   | 50.6 s                                                                                 |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 10 s                                                                                   | 46.4 s                                                                                     | 13.8 s                                                                                 | 49.8 s                                                                                 |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/23/2019

|                              |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |  |                                                                                      |                                                                                                                                                                          |                                                                                      |                                                                                      |                                                                                                                                                                          |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                                                                                                         | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                                                                                                         | SBR                                                                                 |
| Lane Configurations          |  |    |  |   |    |  |   |    |   |   |    |  |
| Traffic Volume (veh/h)       | 154                                                                               | 1175                                                                                                                                                                                                                                                  | 321                                                                               | 243                                                                                                                                                                 | 2426                                                                                                                                                                                                                                                  | 565                                                                               | 590                                                                                                                                                                     | 771                                                                                                                                                                                                                                                         | 93                                                                                                                                                                      | 132                                                                                                                                                                     | 176                                                                                                                                                                                                                                                         | 124                                                                                 |
| Future Volume (veh/h)        | 154                                                                               | 1175                                                                                                                                                                                                                                                  | 321                                                                               | 243                                                                                                                                                                 | 2426                                                                                                                                                                                                                                                  | 565                                                                               | 590                                                                                                                                                                     | 771                                                                                                                                                                                                                                                         | 93                                                                                                                                                                      | 132                                                                                                                                                                     | 176                                                                                                                                                                                                                                                         | 124                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                     | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                         | No                                                                                                                                                                                                                                                          |                                                                                                                                                                         |                                                                                                                                                                         | No                                                                                                                                                                                                                                                          |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                    | 1900                                                                                                                                                                                                                                                        | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                                                                                                        | 1900                                                                                |
| Adj Flow Rate, veh/h         | 162                                                                               | 1237                                                                                                                                                                                                                                                  | 338                                                                               | 256                                                                                                                                                                 | 2554                                                                                                                                                                                                                                                  | 595                                                                               | 621                                                                                                                                                                     | 812                                                                                                                                                                                                                                                         | 98                                                                                                                                                                      | 139                                                                                                                                                                     | 185                                                                                                                                                                                                                                                         | 131                                                                                 |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                                                                                                                | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                                                                                                        | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                                                                                                        | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                   |
| Cap, veh/h                   | 95                                                                                | 2354                                                                                                                                                                                                                                                  | 731                                                                               | 196                                                                                                                                                                 | 2371                                                                                                                                                                                                                                                  | 735                                                                               | 272                                                                                                                                                                     | 977                                                                                                                                                                                                                                                         | 925                                                                                                                                                                     | 195                                                                                                                                                                     | 898                                                                                                                                                                                                                                                         | 401                                                                                 |
| Arrive On Green              | 0.02                                                                              | 0.15                                                                                                                                                                                                                                                  | 0.15                                                                              | 0.06                                                                                                                                                                | 0.46                                                                                                                                                                                                                                                  | 0.46                                                                              | 0.08                                                                                                                                                                    | 0.27                                                                                                                                                                                                                                                        | 0.27                                                                                                                                                                    | 0.06                                                                                                                                                                    | 0.25                                                                                                                                                                                                                                                        | 0.25                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                | 5187                                                                                                                                                                                                                                                  | 1609                                                                              | 3510                                                                                                                                                                    | 3610                                                                                                                                                                                                                                                        | 2834                                                                                                                                                                    | 3510                                                                                                                                                                    | 3610                                                                                                                                                                                                                                                        | 1610                                                                                |
| Grp Volume(v), veh/h         | 162                                                                               | 1237                                                                                                                                                                                                                                                  | 338                                                                               | 256                                                                                                                                                                 | 2554                                                                                                                                                                                                                                                  | 595                                                                               | 621                                                                                                                                                                     | 812                                                                                                                                                                                                                                                         | 98                                                                                                                                                                      | 139                                                                                                                                                                     | 185                                                                                                                                                                                                                                                         | 131                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                | 1729                                                                                                                                                                                                                                                  | 1609                                                                              | 1755                                                                                                                                                                    | 1805                                                                                                                                                                                                                                                        | 1417                                                                                                                                                                    | 1755                                                                                                                                                                    | 1805                                                                                                                                                                                                                                                        | 1610                                                                                |
| Q Serve(g_s), s              | 6.3                                                                               | 26.4                                                                                                                                                                                                                                                  | 23.0                                                                              | 6.7                                                                                                                                                                 | 54.8                                                                                                                                                                                                                                                  | 38.2                                                                              | 9.3                                                                                                                                                                     | 25.4                                                                                                                                                                                                                                                        | 2.9                                                                                                                                                                     | 4.7                                                                                                                                                                     | 4.9                                                                                                                                                                                                                                                         | 8.0                                                                                 |
| Cycle Q Clear(g_c), s        | 6.3                                                                               | 26.4                                                                                                                                                                                                                                                  | 23.0                                                                              | 6.7                                                                                                                                                                 | 54.8                                                                                                                                                                                                                                                  | 38.2                                                                              | 9.3                                                                                                                                                                     | 25.4                                                                                                                                                                                                                                                        | 2.9                                                                                                                                                                     | 4.7                                                                                                                                                                     | 4.9                                                                                                                                                                                                                                                         | 8.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 95                                                                                | 2354                                                                                                                                                                                                                                                  | 731                                                                               | 196                                                                                                                                                                 | 2371                                                                                                                                                                                                                                                  | 735                                                                               | 272                                                                                                                                                                     | 977                                                                                                                                                                                                                                                         | 925                                                                                                                                                                     | 195                                                                                                                                                                     | 898                                                                                                                                                                                                                                                         | 401                                                                                 |
| V/C Ratio(X)                 | 1.71                                                                              | 0.53                                                                                                                                                                                                                                                  | 0.46                                                                              | 1.31                                                                                                                                                                | 1.08                                                                                                                                                                                                                                                  | 0.81                                                                              | 2.28                                                                                                                                                                    | 0.83                                                                                                                                                                                                                                                        | 0.11                                                                                                                                                                    | 0.71                                                                                                                                                                    | 0.21                                                                                                                                                                                                                                                        | 0.33                                                                                |
| Avail Cap(c_a), veh/h        | 95                                                                                | 2354                                                                                                                                                                                                                                                  | 731                                                                               | 196                                                                                                                                                                 | 2371                                                                                                                                                                                                                                                  | 735                                                                               | 272                                                                                                                                                                     | 1324                                                                                                                                                                                                                                                        | 1197                                                                                                                                                                    | 295                                                                                                                                                                     | 1348                                                                                                                                                                                                                                                        | 601                                                                                 |
| HCM Platoon Ratio            | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Upstream Filter(I)           | 0.84                                                                              | 0.84                                                                                                                                                                                                                                                  | 0.84                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.0                                                                              | 39.1                                                                                                                                                                                                                                                  | 37.7                                                                              | 56.7                                                                                                                                                                | 32.6                                                                                                                                                                                                                                                  | 28.1                                                                              | 55.3                                                                                                                                                                    | 41.2                                                                                                                                                                                                                                                        | 28.2                                                                                                                                                                    | 55.7                                                                                                                                                                    | 35.7                                                                                                                                                                                                                                                        | 36.9                                                                                |
| Incr Delay (d2), s/veh       | 352.1                                                                             | 0.7                                                                                                                                                                                                                                                   | 1.8                                                                               | 169.6                                                                                                                                                               | 43.3                                                                                                                                                                                                                                                  | 9.3                                                                               | 588.7                                                                                                                                                                   | 3.4                                                                                                                                                                                                                                                         | 0.0                                                                                                                                                                     | 1.8                                                                                                                                                                     | 0.1                                                                                                                                                                                                                                                         | 0.5                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 12.2                                                                              | 12.3                                                                                                                                                                                                                                                  | 10.2                                                                              | 7.5                                                                                                                                                                 | 30.7                                                                                                                                                                                                                                                  | 15.6                                                                              | 26.3                                                                                                                                                                    | 11.3                                                                                                                                                                                                                                                        | 1.0                                                                                                                                                                     | 2.1                                                                                                                                                                     | 2.1                                                                                                                                                                                                                                                         | 3.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| LnGrp Delay(d),s/veh         | 411.0                                                                             | 39.8                                                                                                                                                                                                                                                  | 39.4                                                                              | 226.2                                                                                                                                                               | 75.8                                                                                                                                                                                                                                                  | 37.4                                                                              | 644.0                                                                                                                                                                   | 44.6                                                                                                                                                                                                                                                        | 28.2                                                                                                                                                                    | 57.5                                                                                                                                                                    | 35.8                                                                                                                                                                                                                                                        | 37.3                                                                                |
| LnGrp LOS                    | F                                                                                 | D                                                                                                                                                                                                                                                     | D                                                                                 | F                                                                                                                                                                   | F                                                                                                                                                                                                                                                     | D                                                                                 | F                                                                                                                                                                       | D                                                                                                                                                                                                                                                           | C                                                                                                                                                                       | E                                                                                                                                                                       | D                                                                                                                                                                                                                                                           | D                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 1737                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 3405                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         | 1531                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         | 455                                                                                                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 74.4                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 80.4                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         | 286.7                                                                                                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 42.9                                                                                                                                                                                                                                                        |                                                                                     |
| Approach LOS                 |                                                                                   | E                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     | F                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         | F                                                                                                                                                                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         | D                                                                                                                                                                                                                                                           |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 7                                                                                                                                                                       | 8                                                                                                                                                                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.4                                                                              | 60.9                                                                                                                                                                                                                                                  | 13.0                                                                              | 35.7                                                                                                                                                                | 10.0                                                                                                                                                                                                                                                  | 61.3                                                                              | 10.4                                                                                                                                                                    | 38.3                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 3.7                                                                               | 5.8                                                                                                                                                                 | 3.7                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Max Green Setting (Gmax), s  | 6.7                                                                               | 39.5                                                                                                                                                                                                                                                  | 9.3                                                                               | 44.8                                                                                                                                                                | 6.3                                                                                                                                                                                                                                                   | 39.9                                                                              | 10.1                                                                                                                                                                    | 44.0                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 8.7                                                                               | 28.4                                                                                                                                                                                                                                                  | 11.3                                                                              | 10.0                                                                                                                                                                | 8.3                                                                                                                                                                                                                                                   | 56.8                                                                              | 6.7                                                                                                                                                                     | 27.4                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 8.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 1.5                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.1                                                                                                                                                                     | 5.1                                                                                                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 120.9                                                                             |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | F                                                                                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↱     | ↱     |
| Traffic Volume (vph) | 941   | 2840  | 284   | 0     | 497   |
| Future Volume (vph)  | 941   | 2840  | 284   | 0     | 497   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 63.0  | 63.0  | 22.0  | 22.0  | 22.0  |
| Total Split (%)      | 74.1% | 74.1% | 25.9% | 25.9% | 25.9% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

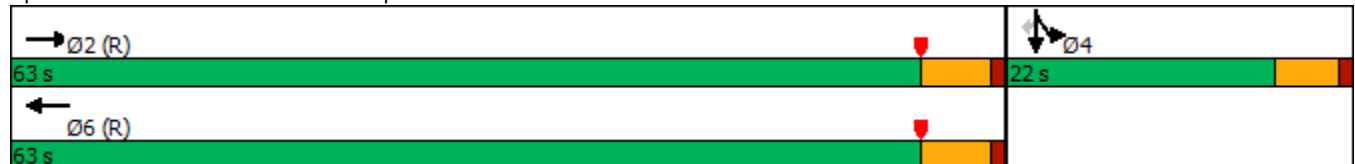
Actuated Cycle Length: 85

Offset: 9 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/22/2019

|                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                  |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     | ↰                                                                                   | ↱                                                                                   | ↰                                                                                   |
| Traffic Volume (veh/h)                                               | 0                                                                                 | 941                                                                               | 398                                                                               | 0                                                                                 | 2840                                                                              | 220                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 284                                                                                 | 0                                                                                   | 497                                                                                 |
| Future Volume (veh/h)                                                | 0                                                                                 | 941                                                                               | 398                                                                               | 0                                                                                 | 2840                                                                              | 220                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 284                                                                                 | 0                                                                                   | 497                                                                                 |
| Initial Q (Qb), veh                                                  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                  | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                     | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                               | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              |                                                                                    |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                 | 0                                                                                 | 970                                                                               | 381                                                                               | 0                                                                                 | 2928                                                                              | 227                                                                               |                                                                                    |                                                                                     |                                                                                     | 195                                                                                 | 0                                                                                   | 572                                                                                 |
| Peak Hour Factor                                                     | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                           | 0                                                                                 | 2467                                                                              | 968                                                                               | 0                                                                                 | 3331                                                                              | 251                                                                               |                                                                                    |                                                                                     |                                                                                     | 359                                                                                 | 0                                                                                   | 637                                                                                 |
| Arrive On Green                                                      | 0.00                                                                              | 0.68                                                                              | 0.68                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.20                                                                                | 0.00                                                                                | 0.20                                                                                |
| Sat Flow, veh/h                                                      | 0                                                                                 | 3808                                                                              | 1427                                                                              | 0                                                                                 | 5083                                                                              | 370                                                                               |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 3215                                                                                |
| Grp Volume(v), veh/h                                                 | 0                                                                                 | 922                                                                               | 429                                                                               | 0                                                                                 | 2036                                                                              | 1119                                                                              |                                                                                    |                                                                                     |                                                                                     | 195                                                                                 | 0                                                                                   | 572                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                             | 0                                                                                 | 1729                                                                              | 1606                                                                              | 0                                                                                 | 1729                                                                              | 1824                                                                              |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 1608                                                                                |
| Q Serve(g_s), s                                                      | 0.0                                                                               | 9.9                                                                               | 10.0                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 8.2                                                                                 | 0.0                                                                                 | 14.7                                                                                |
| Cycle Q Clear(g_c), s                                                | 0.0                                                                               | 9.9                                                                               | 10.0                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 8.2                                                                                 | 0.0                                                                                 | 14.7                                                                                |
| Prop In Lane                                                         | 0.00                                                                              |                                                                                   | 0.89                                                                              | 0.00                                                                              |                                                                                   | 0.20                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                               | 0                                                                                 | 2346                                                                              | 1089                                                                              | 0                                                                                 | 2346                                                                              | 1237                                                                              |                                                                                    |                                                                                     |                                                                                     | 359                                                                                 | 0                                                                                   | 637                                                                                 |
| V/C Ratio(X)                                                         | 0.00                                                                              | 0.39                                                                              | 0.39                                                                              | 0.00                                                                              | 0.87                                                                              | 0.90                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.54                                                                                | 0.00                                                                                | 0.90                                                                                |
| Avail Cap(c_a), veh/h                                                | 0                                                                                 | 2346                                                                              | 1089                                                                              | 0                                                                                 | 2346                                                                              | 1237                                                                              |                                                                                    |                                                                                     |                                                                                     | 362                                                                                 | 0                                                                                   | 643                                                                                 |
| HCM Platoon Ratio                                                    | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                              | 2.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                   | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.27                                                                              | 0.27                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                             | 0.0                                                                               | 6.0                                                                               | 6.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 30.6                                                                                | 0.0                                                                                 | 33.2                                                                                |
| Incr Delay (d2), s/veh                                               | 0.0                                                                               | 0.5                                                                               | 1.1                                                                               | 0.0                                                                               | 1.3                                                                               | 3.4                                                                               |                                                                                    |                                                                                     |                                                                                     | 1.6                                                                                 | 0.0                                                                                 | 15.4                                                                                |
| Initial Q Delay(d3),s/veh                                            | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                             | 0.0                                                                               | 2.4                                                                               | 2.4                                                                               | 0.0                                                                               | 0.4                                                                               | 1.2                                                                               |                                                                                    |                                                                                     |                                                                                     | 3.5                                                                                 | 0.0                                                                                 | 6.7                                                                                 |
| Unsig. Movement Delay, s/veh                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                 | 0.0                                                                               | 6.5                                                                               | 7.1                                                                               | 0.0                                                                               | 1.3                                                                               | 3.4                                                                               |                                                                                    |                                                                                     |                                                                                     | 32.3                                                                                | 0.0                                                                                 | 48.6                                                                                |
| LnGrp LOS                                                            | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | C                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h                                                  |                                                                                   | 1351                                                                              |                                                                                   |                                                                                   | 3155                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 767                                                                                 |                                                                                     |
| Approach Delay, s/veh                                                |                                                                                   | 6.7                                                                               |                                                                                   |                                                                                   | 2.1                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 44.4                                                                                |                                                                                     |
| Approach LOS                                                         |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                 |                                                                                   | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                             |                                                                                   | 63.2                                                                              |                                                                                   | 21.8                                                                              |                                                                                   | 63.2                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                              |                                                                                   | 5.5                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.5                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                          |                                                                                   | 57.5                                                                              |                                                                                   | 17.0                                                                              |                                                                                   | 57.5                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                         |                                                                                   | 12.0                                                                              |                                                                                   | 16.7                                                                              |                                                                                   | 2.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                              |                                                                                   | 10.7                                                                              |                                                                                   | 0.1                                                                               |                                                                                   | 44.8                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                   |                                                                                   |                                                                                   | 9.4                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                          |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved volume balancing among the lanes for turning movement. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                      |  |                                                                                                                                                                      |                                                                                                                                                                      |  |  |                                                                                    |   |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                               | NBT                                                                                                                                                                 | NBR                                                                                 |
| Lane Configurations  |  |    |    |  |  |   |  |
| Traffic Volume (vph) | 110                                                                               | 1150                                                                                                                                                                                                                                                  | 1844                                                                                                                                                                                                                                                  | 191                                                                               | 1112                                                                              | 4                                                                                                                                                                   | 245                                                                                 |
| Future Volume (vph)  | 110                                                                               | 1150                                                                                                                                                                                                                                                  | 1844                                                                                                                                                                                                                                                  | 191                                                                               | 1112                                                                              | 4                                                                                                                                                                   | 245                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Split                                                                             | NA                                                                                                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     |                                                                                   | 8                                                                                 | 8                                                                                                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                     | 8                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     | 6                                                                                 | 8                                                                                 | 8                                                                                                                                                                   | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 9.5                                                                               | 10.5                                                                                                                                                                                                                                                  | 33.5                                                                                                                                                                                                                                                  | 33.5                                                                              | 10.0                                                                              | 10.0                                                                                                                                                                | 10.0                                                                                |
| Total Split (s)      | 10.0                                                                              | 49.0                                                                                                                                                                                                                                                  | 39.0                                                                                                                                                                                                                                                  | 39.0                                                                              | 36.0                                                                              | 36.0                                                                                                                                                                | 36.0                                                                                |
| Total Split (%)      | 11.8%                                                                             | 57.6%                                                                                                                                                                                                                                                 | 45.9%                                                                                                                                                                                                                                                 | 45.9%                                                                             | 42.4%                                                                             | 42.4%                                                                                                                                                               | 42.4%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                               | 4.0                                                                               | 4.0                                                                                                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.5                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Lead/Lag             | Lag                                                                               |                                                                                                                                                                                                                                                       | Lead                                                                                                                                                                                                                                                  | Lead                                                                              |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                                   | Yes                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | Max                                                                               | Max                                                                                                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 85

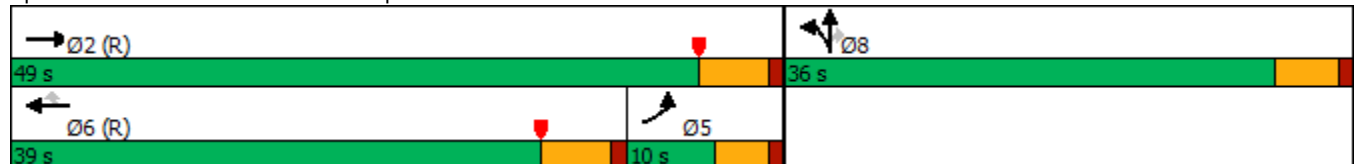
Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                                                                                                    |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |   |                                                                                      |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)                                                                             | 110                                                                               | 1150                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1844                                                                                                                                                                                                                                                  | 191                                                                               | 1112                                                                                | 4                                                                                                                                                                       | 245                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)                                                                              | 110                                                                               | 1150                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1844                                                                                                                                                                                                                                                  | 191                                                                               | 1112                                                                                | 4                                                                                                                                                                       | 245                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach                                                                              | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h                                                                               | 112                                                                               | 1173                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1882                                                                                                                                                                                                                                                  | 175                                                                               | 1195                                                                                | 0                                                                                                                                                                       | 127                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor                                                                                   | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                                | 0.98                                                                                                                                                                    | 0.98                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                                                                                         | 484                                                                               | 3768                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green                                                                                    | 0.54                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.39                                                                                                                                                                                                                                                  | 0.39                                                                              | 0.36                                                                                | 0.00                                                                                                                                                                    | 0.36                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h                                                                                    | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1573                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h                                                                               | 112                                                                               | 1173                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1882                                                                                                                                                                                                                                                  | 175                                                                               | 1195                                                                                | 0                                                                                                                                                                       | 127                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                                                           | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1573                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                                                    | 2.8                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 29.3                                                                                                                                                                                                                                                  | 6.4                                                                               | 26.6                                                                                | 0.0                                                                                                                                                                     | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                                              | 2.8                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 29.3                                                                                                                                                                                                                                                  | 6.4                                                                               | 26.6                                                                                | 0.0                                                                                                                                                                     | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                                                       | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                                                             | 484                                                                               | 3768                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                                                       | 0.23                                                                              | 0.31                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.28                                                                              | 0.91                                                                                | 0.00                                                                                                                                                                    | 0.22                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                                              | 484                                                                               | 3768                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                                                  | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)                                                                                 | 0.88                                                                              | 0.88                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                                                           | 15.1                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 24.5                                                                                                                                                                                                                                                  | 17.6                                                                              | 25.6                                                                                | 0.0                                                                                                                                                                     | 18.6                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                                                             | 0.2                                                                               | 0.2                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 8.3                                                                                                                                                                                                                                                   | 1.1                                                                               | 10.5                                                                                | 0.0                                                                                                                                                                     | 0.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                                                           | 1.0                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 11.7                                                                                                                                                                                                                                                  | 2.2                                                                               | 12.1                                                                                | 0.0                                                                                                                                                                     | 1.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 15.3                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 32.8                                                                                                                                                                                                                                                  | 18.7                                                                              | 36.1                                                                                | 0.0                                                                                                                                                                     | 19.5                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                                                          | B                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | B                                                                                 | D                                                                                   | A                                                                                                                                                                       | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                                                | 1285                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2057                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1322                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                              | 1.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 31.6                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 34.5                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                       | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                               | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           | 67.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 28.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 39.0                                                                                |                                                                                                                                                                         |                                                                                     | 36.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 5.5                                                                               |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        | 43.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 34                                                                                |                                                                                                                                                                         |                                                                                     | 31.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       | 2.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.8                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 31.3                                                                                |                                                                                                                                                                         |                                                                                     | 28.6                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            | 8.9                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 1.9                                                                                 |                                                                                                                                                                         |                                                                                     | 1.3                                                                                 |                                                                                     |                                                                                     |
| Intersection Summary                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 | 24.1                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved volume balancing among the lanes for turning movement.                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection             |                                                                                   |      |                                                                                   |      |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 3.6                                                                               |      |                                                                                   |      |      |                                                                                   |
| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 20                                                                                | 0    | 14                                                                                | 9    | 0    | 5                                                                                 |
| Future Vol, veh/h        | 20                                                                                | 0    | 14                                                                                | 9    | 0    | 5                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92   | 92                                                                                | 92   | 92   | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 22                                                                                | 0    | 15                                                                                | 10   | 0    | 5                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 25     | 20     | 0      |
| Stage 1              | 20     | -      | -      |
| Stage 2              | 5      | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 996    | 1064   | -      |
| Stage 1              | 1008   | -      | -      |
| Stage 2              | 1023   | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 996    | 1064   | -      |
| Mov Cap-2 Maneuver   | 996    | -      | -      |
| Stage 1              | 1008   | -      | -      |
| Stage 2              | 1023   | -      | -      |

| Approach             | WB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 8.7 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT  |
|-----------------------|-----|----------|-------|------|
| Capacity (veh/h)      | -   | -        | 996   | 1603 |
| HCM Lane V/C Ratio    | -   | -        | 0.022 | -    |
| HCM Control Delay (s) | -   | -        | 8.7   | 0    |
| HCM Lane LOS          | -   | -        | A     | A    |
| HCM 95th %tile Q(veh) | -   | -        | 0.1   | 0    |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/23/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 7                                                                                 | 2641                                                                              | 67                                                                                | 2256                                                                              | 23                                                                                | 64                                                                                | 5                                                                                   | 47                                                                                  | 32                                                                                  | 5                                                                                   | 15                                                                                  |
| Future Volume (vph)  | 7                                                                                 | 2641                                                                              | 67                                                                                | 2256                                                                              | 23                                                                                | 64                                                                                | 5                                                                                   | 47                                                                                  | 32                                                                                  | 5                                                                                   | 15                                                                                  |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 68.4                                                                              | 11.0                                                                              | 70.2                                                                              | 70.2                                                                              | 40.6                                                                              | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                | 40.6                                                                                |
| Total Split (%)      | 7.7%                                                                              | 57.0%                                                                             | 9.2%                                                                              | 58.5%                                                                             | 58.5%                                                                             | 33.8%                                                                             | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               | 33.8%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

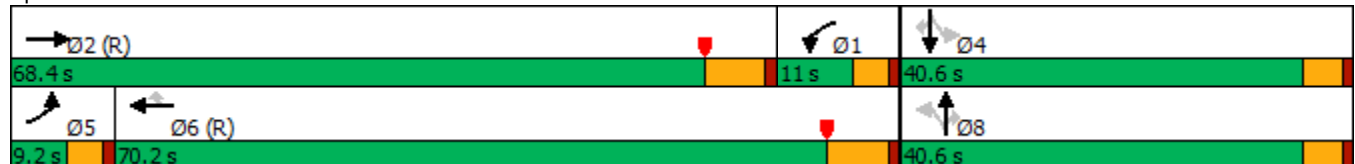
Actuated Cycle Length: 120

Offset: 71 (59%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/23/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 7                                                                                 | 2641                                                                                                                                                                                                                                                  | 46                                                                                | 67                                                                                | 2256                                                                                                                                                                                                                                                  | 23                                                                                | 64                                                                                 | 5                                                                                   | 47                                                                                  | 32                                                                                  | 5                                                                                   | 15                                                                                  |
| Future Volume (veh/h)        | 7                                                                                 | 2641                                                                                                                                                                                                                                                  | 46                                                                                | 67                                                                                | 2256                                                                                                                                                                                                                                                  | 23                                                                                | 64                                                                                 | 5                                                                                   | 47                                                                                  | 32                                                                                  | 5                                                                                   | 15                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 0.99                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 7                                                                                 | 2780                                                                                                                                                                                                                                                  | 46                                                                                | 71                                                                                | 2375                                                                                                                                                                                                                                                  | 24                                                                                | 67                                                                                 | 5                                                                                   | 27                                                                                  | 34                                                                                  | 5                                                                                   | 3                                                                                   |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 16                                                                                | 2711                                                                                                                                                                                                                                                  | 45                                                                                | 624                                                                               | 4518                                                                                                                                                                                                                                                  | 1402                                                                              | 58                                                                                 | 2                                                                                   | 482                                                                                 | 56                                                                                  | 5                                                                                   | 477                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.52                                                                                                                                                                                                                                                  | 0.52                                                                              | 0.23                                                                              | 0.58                                                                                                                                                                                                                                                  | 0.58                                                                              | 0.30                                                                               | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                | 0.30                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5256                                                                                                                                                                                                                                                  | 87                                                                                | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 0                                                                                  | 8                                                                                   | 1605                                                                                | 0                                                                                   | 16                                                                                  | 1590                                                                                |
| Grp Volume(v), veh/h         | 7                                                                                 | 1825                                                                                                                                                                                                                                                  | 1001                                                                              | 71                                                                                | 2375                                                                                                                                                                                                                                                  | 24                                                                                | 72                                                                                 | 0                                                                                   | 27                                                                                  | 39                                                                                  | 0                                                                                   | 3                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1884                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 8                                                                                  | 0                                                                                   | 1605                                                                                | 16                                                                                  | 0                                                                                   | 1590                                                                                |
| Q Serve(g_s), s              | 0.5                                                                               | 61.9                                                                                                                                                                                                                                                  | 61.9                                                                              | 3.7                                                                               | 33.0                                                                                                                                                                                                                                                  | 0.8                                                                               | 0.0                                                                                | 0.0                                                                                 | 1.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.2                                                                                 |
| Cycle Q Clear(g_c), s        | 0.5                                                                               | 61.9                                                                                                                                                                                                                                                  | 61.9                                                                              | 3.7                                                                               | 33.0                                                                                                                                                                                                                                                  | 0.8                                                                               | 36.0                                                                               | 0.0                                                                                 | 1.4                                                                                 | 36.0                                                                                | 0.0                                                                                 | 0.2                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.05                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 0.93                                                                               |                                                                                     | 1.00                                                                                | 0.87                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 16                                                                                | 1784                                                                                                                                                                                                                                                  | 972                                                                               | 624                                                                               | 4518                                                                                                                                                                                                                                                  | 1402                                                                              | 60                                                                                 | 0                                                                                   | 482                                                                                 | 61                                                                                  | 0                                                                                   | 477                                                                                 |
| V/C Ratio(X)                 | 0.45                                                                              | 1.02                                                                                                                                                                                                                                                  | 1.03                                                                              | 0.11                                                                              | 0.53                                                                                                                                                                                                                                                  | 0.02                                                                              | 1.19                                                                               | 0.00                                                                                | 0.06                                                                                | 0.64                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 1784                                                                                                                                                                                                                                                  | 972                                                                               | 624                                                                               | 4518                                                                                                                                                                                                                                                  | 1402                                                                              | 60                                                                                 | 0                                                                                   | 482                                                                                 | 61                                                                                  | 0                                                                                   | 477                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.67                                                                              | 0.67                                                                                                                                                                                                                                                  | 0.67                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.83                                                                              | 0.83                                                                                                                                                                                                                                                  | 0.83                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.2                                                                              | 29.0                                                                                                                                                                                                                                                  | 29.1                                                                              | 31.7                                                                              | 10.1                                                                                                                                                                                                                                                  | 3.4                                                                               | 58.6                                                                               | 0.0                                                                                 | 29.9                                                                                | 55.7                                                                                | 0.0                                                                                 | 29.5                                                                                |
| Incr Delay (d2), s/veh       | 7.2                                                                               | 27.3                                                                                                                                                                                                                                                  | 36.9                                                                              | 0.0                                                                               | 0.4                                                                                                                                                                                                                                                   | 0.0                                                                               | 177.8                                                                              | 0.0                                                                                 | 0.2                                                                                 | 42.0                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 29.1                                                                                                                                                                                                                                                  | 34.3                                                                              | 1.6                                                                               | 12.9                                                                                                                                                                                                                                                  | 0.0                                                                               | 4.8                                                                                | 0.0                                                                                 | 0.6                                                                                 | 1.9                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 66.4                                                                              | 56.4                                                                                                                                                                                                                                                  | 65.9                                                                              | 31.7                                                                              | 10.5                                                                                                                                                                                                                                                  | 3.4                                                                               | 236.4                                                                              | 0.0                                                                                 | 30.1                                                                                | 97.7                                                                                | 0.0                                                                                 | 29.5                                                                                |
| LnGrp LOS                    | E                                                                                 | F                                                                                                                                                                                                                                                     | F                                                                                 | C                                                                                 | B                                                                                                                                                                                                                                                     | A                                                                                 | F                                                                                  | A                                                                                   | C                                                                                   | F                                                                                   | A                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 2833                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 2470                                                                                                                                                                                                                                                  |                                                                                   |                                                                                    |                                                                                     | 99                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 59.8                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 11.0                                                                                                                                                                                                                                                  |                                                                                   |                                                                                    |                                                                                     | 180.1                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | E                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | B                                                                                                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                     | F                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 4                                                                                 | 5                                                                                                                                                                                                                                                     | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 48.5                                                                              | 68.4                                                                                                                                                                                                                                                  |                                                                                   | 40.6                                                                              | 5.2                                                                                                                                                                                                                                                   | 111.7                                                                             |                                                                                    | 40.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 6.5                                                                               | * 6.5                                                                                                                                                                                                                                                 |                                                                                   | 4.6                                                                               | * 4.2                                                                                                                                                                                                                                                 | 6.5                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 6.8                                                                               | * 62                                                                                                                                                                                                                                                  |                                                                                   | 36.0                                                                              | * 5                                                                                                                                                                                                                                                   | 63.7                                                                              |                                                                                    | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.7                                                                               | 63.9                                                                                                                                                                                                                                                  |                                                                                   | 38.0                                                                              | 2.5                                                                                                                                                                                                                                                   | 35.0                                                                              |                                                                                    | 38.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 24.5                                                                              |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 40.1 |
| HCM 6th LOS        | D    |

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/23/2019



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | Ø6   |
|----------------------|------|-------|------|-------|-------|-------|------|
| Lane Configurations  |      |       |      |       |       |       |      |
| Traffic Volume (vph) | 3    | 2688  | 3    | 2416  | 5     | 0     |      |
| Future Volume (vph)  | 3    | 2688  | 3    | 2416  | 5     | 0     |      |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    |      |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     | 6    |
| Permitted Phases     |      |       |      |       | 2     |       |      |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     |      |
| Switch Phase         |      |       |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.2  | 23.5  | 9.2  | 23.5  | 14.6  | 14.6  | 14.6 |
| Total Split (s)      | 10.0 | 95.0  | 10.0 | 95.0  | 15.0  | 15.0  | 15.0 |
| Total Split (%)      | 8.3% | 79.2% | 8.3% | 79.2% | 12.5% | 12.5% | 13%  |
| Yellow Time (s)      | 3.2  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   |      |
| Total Lost Time (s)  | 4.2  | 6.5   | 4.2  | 6.5   |       | 4.6   |      |
| Lead/Lag             | Lag  | Lead  | Lag  | Lead  |       |       |      |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |      |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|      |        |      |
|------|--------|------|
| Ø2   | Ø4 (R) | Ø3   |
| 15 s | 95 s   | 10 s |
| Ø6   | Ø8 (R) | Ø7   |
| 15 s | 95 s   | 10 s |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/23/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 3                                                                                 | 2688                                                                              | 1                                                                                 | 3                                                                                 | 2416                                                                              | 0                                                                                 | 5                                                                                  | 0                                                                                   | 2                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2688                                                                              | 1                                                                                 | 3                                                                                 | 2416                                                                              | 0                                                                                 | 5                                                                                  | 0                                                                                   | 2                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2922                                                                              | 1                                                                                 | 3                                                                                 | 2626                                                                              | 0                                                                                 | 5                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 221                                                                               | 3950                                                                              | 1                                                                                 | 221                                                                               | 3825                                                                              | 0                                                                                 | 78                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 24                                                                                  | 0                                                                                   |
| Arrive On Green              | 0.24                                                                              | 1.00                                                                              | 1.00                                                                              | 0.12                                                                              | 0.74                                                                              | 0.00                                                                              | 0.01                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5356                                                                              | 2                                                                                 | 1810                                                                              | 5358                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Grp Volume(v), veh/h         | 3                                                                                 | 1886                                                                              | 1037                                                                              | 3                                                                                 | 2626                                                                              | 0                                                                                 | 5                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1900                                                                              | 1810                                                                              | 1729                                                                              | 0                                                                                 | 1440                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 32.3                                                                              | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 32.3                                                                              | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                               |                                                                                     | 0.00                                                                                | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 221                                                                               | 2550                                                                              | 1401                                                                              | 221                                                                               | 3825                                                                              | 0                                                                                 | 78                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 24                                                                                  | 0                                                                                   |
| V/C Ratio(X)                 | 0.01                                                                              | 0.74                                                                              | 0.74                                                                              | 0.01                                                                              | 0.69                                                                              | 0.00                                                                              | 0.06                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 221                                                                               | 2550                                                                              | 1401                                                                              | 221                                                                               | 3825                                                                              | 0                                                                                 | 185                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 165                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.09                                                                              | 0.09                                                                              | 0.09                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 39.9                                                                              | 0.0                                                                               | 0.0                                                                               | 46.3                                                                              | 8.4                                                                               | 0.0                                                                               | 58.7                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.2                                                                               | 0.3                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 0.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.1                                                                               | 0.1                                                                               | 0.1                                                                               | 8.8                                                                               | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 39.9                                                                              | 0.2                                                                               | 0.3                                                                               | 46.3                                                                              | 9.4                                                                               | 0.0                                                                               | 59.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                  | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 2926                                                                              |                                                                                   |                                                                                   | 2629                                                                              |                                                                                   |                                                                                   | 5                                                                                  |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.3                                                                               |                                                                                   |                                                                                   | 9.4                                                                               |                                                                                   |                                                                                   | 59.0                                                                               |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | E                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 6.1                                                                               |                                                                                   | 18.9                                                                              | 95.0                                                                              |                                                                                   | 6.1                                                                               |                                                                                    | 18.9                                                                                | 95.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.2                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               |                                                                                    | 4.2                                                                                 | * 6.5                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                   | 5.8                                                                               | * 89                                                                              |                                                                                   | 10.4                                                                              |                                                                                    | 5.8                                                                                 | * 89                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.4                                                                               |                                                                                   | 2.2                                                                               | 2.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 2.2                                                                                 | 34.3                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 72.3                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 45.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 4.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection               |             |                        |       |        |                            |       |          |      |                                |            |      |      |
|----------------------------|-------------|------------------------|-------|--------|----------------------------|-------|----------|------|--------------------------------|------------|------|------|
| Int Delay, s/veh           | 88.7        |                        |       |        |                            |       |          |      |                                |            |      |      |
| Movement                   | EBL         | EBT                    | EBR   | WBL    | WBT                        | WBR   | NBL      | NBT  | NBR                            | SBL        | SBT  | SBR  |
| Lane Configurations        | ↱ ↑↑↑       |                        |       | ↱ ↑↑↑  |                            |       | ↱        | ↱    |                                | ↱          | ↱    |      |
| Traffic Vol, veh/h         | 2           | 2677                   | 13    | 25     | 2406                       | 16    | 2        | 0    | 10                             | 37         | 0    | 5    |
| Future Vol, veh/h          | 2           | 2677                   | 13    | 25     | 2406                       | 16    | 2        | 0    | 10                             | 37         | 0    | 5    |
| Conflicting Peds, #/hr     | 0           | 0                      | 0     | 0      | 0                          | 0     | 0        | 0    | 0                              | 0          | 0    | 0    |
| Sign Control               | Free        | Free                   | Free  | Free   | Free                       | Free  | Stop     | Stop | Stop                           | Stop       | Stop | Stop |
| RT Channelized             | -           | -                      | None  | -      | -                          | None  | -        | -    | None                           | -          | -    | None |
| Storage Length             | 155         | -                      | -     | 155    | -                          | -     | 0        | -    | -                              | 0          | -    | -    |
| Veh in Median Storage, #   | -           | 0                      | -     | -      | 0                          | -     | -        | 0    | -                              | -          | 0    | -    |
| Grade, %                   | -           | 0                      | -     | -      | 0                          | -     | -        | 0    | -                              | -          | 0    | -    |
| Peak Hour Factor           | 92          | 92                     | 92    | 92     | 92                         | 92    | 92       | 92   | 92                             | 92         | 92   | 92   |
| Heavy Vehicles, %          | 0           | 0                      | 0     | 0      | 0                          | 0     | 0        | 0    | 0                              | 0          | 0    | 0    |
| Mvmt Flow                  | 2           | 2910                   | 14    | 27     | 2615                       | 17    | 2        | 0    | 11                             | 40         | 0    | 5    |
|                            |             |                        |       |        |                            |       |          |      |                                |            |      |      |
| Major/Minor                | Major1      |                        |       | Major2 |                            |       | Minor1   |      |                                | Minor2     |      |      |
| Conflicting Flow All       | 2632        | 0                      | 0     | 2924   | 0                          | 0     | 4021     | 5607 | 1462                           | 3846       | 5606 | 1316 |
| Stage 1                    | -           | -                      | -     | -      | -                          | -     | 2921     | 2921 | -                              | 2678       | 2678 | -    |
| Stage 2                    | -           | -                      | -     | -      | -                          | -     | 1100     | 2686 | -                              | 1168       | 2928 | -    |
| Critical Hdwy              | 5.3         | -                      | -     | 5.3    | -                          | -     | 6.4      | 6.5  | 7.1                            | 6.4        | 6.5  | 7.1  |
| Critical Hdwy Stg 1        | -           | -                      | -     | -      | -                          | -     | 7.3      | 5.5  | -                              | 7.3        | 5.5  | -    |
| Critical Hdwy Stg 2        | -           | -                      | -     | -      | -                          | -     | 6.7      | 5.5  | -                              | 6.7        | 5.5  | -    |
| Follow-up Hdwy             | 3.1         | -                      | -     | 3.1    | -                          | -     | 3.8      | 4    | 3.9                            | 3.8        | 4    | 3.9  |
| Pot Cap-1 Maneuver         | 61          | -                      | -     | 43     | -                          | -     | 3        | 0    | 103                            | ~ 4        | 0    | 129  |
| Stage 1                    | -           | -                      | -     | -      | -                          | -     | 8        | 35   | -                              | ~ 12       | 47   | -    |
| Stage 2                    | -           | -                      | -     | -      | -                          | -     | 207      | 47   | -                              | 188        | 35   | -    |
| Platoon blocked, %         |             | -                      | -     |        | -                          | -     |          |      |                                |            |      |      |
| Mov Cap-1 Maneuver         | 61          | -                      | -     | 43     | -                          | -     | ~ 1      | 0    | 103                            | ~ 2        | 0    | 129  |
| Mov Cap-2 Maneuver         | -           | -                      | -     | -      | -                          | -     | ~ 1      | 0    | -                              | ~ 2        | 0    | -    |
| Stage 1                    | -           | -                      | -     | -      | -                          | -     | 8        | 34   | -                              | ~ 12       | 17   | -    |
| Stage 2                    | -           | -                      | -     | -      | -                          | -     | 74       | 17   | -                              | 163        | 34   | -    |
|                            |             |                        |       |        |                            |       |          |      |                                |            |      |      |
| Approach                   | EB          |                        |       | WB     |                            |       | NB       |      |                                | SB         |      |      |
| HCM Control Delay, s       | 0           |                        |       | 1.8    |                            |       | \$ 997.4 |      |                                | \$ 10576.7 |      |      |
| HCM LOS                    |             |                        |       |        |                            |       | F        |      |                                | F          |      |      |
|                            |             |                        |       |        |                            |       |          |      |                                |            |      |      |
| Minor Lane/Major Mvmt      | NBLn1 NBLn2 |                        | EBL   | EBT    | EBR                        | WBL   | WBT      | WBR  | SBLn1                          | SBLn2      |      |      |
| Capacity (veh/h)           | 1           | 103                    | 61    | -      | -                          | 43    | -        | -    | 2                              | 129        |      |      |
| HCM Lane V/C Ratio         | 2.174       | 0.106                  | 0.036 | -      | -                          | 0.632 | -        | -    | 20.109                         | 0.042      |      |      |
| HCM Control Delay (s)      | \$ 5764.3   | 44                     | 66.2  | -      | -                          | 181   | -        | -    | \$ 12001.4                     | 34.1       |      |      |
| HCM Lane LOS               | F           | E                      | F     | -      | -                          | F     | -        | -    | F                              | D          |      |      |
| HCM 95th %tile Q(veh)      | 1           | 0.3                    | 0.1   | -      | -                          | 2.4   | -        | -    | 6.9                            | 0.1        |      |      |
| Notes                      |             |                        |       |        |                            |       |          |      |                                |            |      |      |
| ~: Volume exceeds capacity |             | \$: Delay exceeds 300s |       |        | +: Computation Not Defined |       |          |      | *: All major volume in platoon |            |      |      |

Timings  
5: Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/23/2019

|                      |  |  |  |  |  |  |   |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBR                                                                                 | SBL                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 15                                                                                | 2834                                                                              | 66                                                                                | 2446                                                                              | 22                                                                                | 33                                                                                | 123                                                                                 | 29                                                                                  | 17                                                                                  |
| Future Volume (vph)  | 15                                                                                | 2834                                                                              | 66                                                                                | 2446                                                                              | 22                                                                                | 33                                                                                | 123                                                                                 | 29                                                                                  | 17                                                                                  |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | Perm                                                                                | Prot                                                                                | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                 |                                                                                     | 7                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   | 8                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                 | 8                                                                                   | 7                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               | 10.0                                                                                | 5.0                                                                                 | 10.0                                                                                |
| Minimum Split (s)    | 9.6                                                                               | 16.5                                                                              | 9.6                                                                               | 30.5                                                                              | 30.5                                                                              | 9.6                                                                               | 26.6                                                                                | 9.6                                                                                 | 14.6                                                                                |
| Total Split (s)      | 9.6                                                                               | 73.0                                                                              | 10.2                                                                              | 73.6                                                                              | 73.6                                                                              | 11.2                                                                              | 27.2                                                                                | 9.6                                                                                 | 25.6                                                                                |
| Total Split (%)      | 8.0%                                                                              | 60.8%                                                                             | 8.5%                                                                              | 61.3%                                                                             | 61.3%                                                                             | 9.3%                                                                              | 22.7%                                                                               | 8.0%                                                                                | 21.3%                                                                               |
| Yellow Time (s)      | 3.6                                                                               | 5.5                                                                               | 3.6                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.6                                                                               | 6.5                                                                               | 4.6                                                                               | 6.5                                                                               | 6.5                                                                               | 4.6                                                                               | 4.6                                                                                 | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                                | None                                                                                | None                                                                                |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 76.7 (64%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 5: Alessandro Bl.

|                                                                                     |                                                                                     |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø3                                                                                    | Ø4                                                                                    |
| 10.2 s                                                                              | 73 s                                                                                | 11.2 s                                                                                | 25.6 s                                                                                |
|  |  |  |  |
| Ø5                                                                                  | Ø6                                                                                  | Ø7                                                                                    | Ø8                                                                                    |
| 9.6 s                                                                               | 73.6 s                                                                              | 9.6 s                                                                                 | 27.2 s                                                                                |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

5: Alessandro Bl.

05/23/2019

|                                                                                                          |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |    |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                 | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                                 | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                      |  |    |                                                                                   |  |    |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)                                                                                   | 15                                                                                | 2834                                                                                                                                                                                                                                                  | 18                                                                                | 66                                                                                | 2446                                                                                                                                                                                                                                                  | 22                                                                                  | 33                                                                                  | 0                                                                                   | 123                                                                                 | 29                                                                                  | 0                                                                                   | 17                                                                                  |
| Future Volume (veh/h)                                                                                    | 15                                                                                | 2834                                                                                                                                                                                                                                                  | 18                                                                                | 66                                                                                | 2446                                                                                                                                                                                                                                                  | 22                                                                                  | 33                                                                                  | 0                                                                                   | 123                                                                                 | 29                                                                                  | 0                                                                                   | 17                                                                                  |
| Initial Q (Qb), veh                                                                                      | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                      | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                         | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                    |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                   | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                                     | 16                                                                                | 3114                                                                                                                                                                                                                                                  | 20                                                                                | 72                                                                                | 2688                                                                                                                                                                                                                                                  | 23                                                                                  | 36                                                                                  | 0                                                                                   | 134                                                                                 | 32                                                                                  | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor                                                                                         | 0.91                                                                              | 0.91                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.91                                                                                                                                                                                                                                                  | 0.91                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.91                                                                                | 0.92                                                                                | 0.91                                                                                |
| Percent Heavy Veh, %                                                                                     | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                               | 31                                                                                | 3438                                                                                                                                                                                                                                                  | 22                                                                                | 84                                                                                | 3507                                                                                                                                                                                                                                                  | 1065                                                                                | 53                                                                                  | 190                                                                                 | 161                                                                                 | 68                                                                                  | 206                                                                                 |                                                                                     |
| Arrive On Green                                                                                          | 0.02                                                                              | 0.65                                                                                                                                                                                                                                                  | 0.65                                                                              | 0.05                                                                              | 0.68                                                                                                                                                                                                                                                  | 0.68                                                                                | 0.03                                                                                | 0.00                                                                                | 0.10                                                                                | 0.04                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h                                                                                          | 1810                                                                              | 5318                                                                                                                                                                                                                                                  | 34                                                                                | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1575                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |
| Grp Volume(v), veh/h                                                                                     | 16                                                                                | 2023                                                                                                                                                                                                                                                  | 1111                                                                              | 72                                                                                | 2688                                                                                                                                                                                                                                                  | 23                                                                                  | 36                                                                                  | 0                                                                                   | 134                                                                                 | 32                                                                                  | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln                                                                                 | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1894                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1575                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |
| Q Serve(g_s), s                                                                                          | 1.1                                                                               | 59.8                                                                                                                                                                                                                                                  | 60.2                                                                              | 4.7                                                                               | 41.8                                                                                                                                                                                                                                                  | 0.6                                                                                 | 2.4                                                                                 | 0.0                                                                                 | 9.8                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s                                                                                    | 1.1                                                                               | 59.8                                                                                                                                                                                                                                                  | 60.2                                                                              | 4.7                                                                               | 41.8                                                                                                                                                                                                                                                  | 0.6                                                                                 | 2.4                                                                                 | 0.0                                                                                 | 9.8                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                                                                                             | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.02                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                   | 31                                                                                | 2236                                                                                                                                                                                                                                                  | 1225                                                                              | 84                                                                                | 3507                                                                                                                                                                                                                                                  | 1065                                                                                | 53                                                                                  | 190                                                                                 | 161                                                                                 | 68                                                                                  | 206                                                                                 |                                                                                     |
| V/C Ratio(X)                                                                                             | 0.51                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.91                                                                              | 0.85                                                                              | 0.77                                                                                                                                                                                                                                                  | 0.02                                                                                | 0.68                                                                                | 0.00                                                                                | 0.83                                                                                | 0.47                                                                                | 0.00                                                                                |                                                                                     |
| Avail Cap(c_a), veh/h                                                                                    | 75                                                                                | 2236                                                                                                                                                                                                                                                  | 1225                                                                              | 84                                                                                | 3507                                                                                                                                                                                                                                                  | 1065                                                                                | 100                                                                                 | 358                                                                                 | 303                                                                                 | 75                                                                                  | 333                                                                                 |                                                                                     |
| HCM Platoon Ratio                                                                                        | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                  | 0.09                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh                                                                                 | 58.5                                                                              | 18.1                                                                                                                                                                                                                                                  | 18.1                                                                              | 56.8                                                                              | 13.1                                                                                                                                                                                                                                                  | 6.4                                                                                 | 57.7                                                                                | 0.0                                                                                 | 53.0                                                                                | 56.6                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh                                                                                   | 4.8                                                                               | 6.6                                                                                                                                                                                                                                                   | 11.3                                                                              | 7.7                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                                 | 14.5                                                                                | 0.0                                                                                 | 10.4                                                                                | 5.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                 | 0.5                                                                               | 21.0                                                                                                                                                                                                                                                  | 24.8                                                                              | 2.3                                                                               | 12.7                                                                                                                                                                                                                                                  | 0.2                                                                                 | 1.3                                                                                 | 0.0                                                                                 | 4.5                                                                                 | 1.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh                                                                             |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                     | 63.3                                                                              | 24.7                                                                                                                                                                                                                                                  | 29.5                                                                              | 64.4                                                                              | 13.2                                                                                                                                                                                                                                                  | 6.4                                                                                 | 72.2                                                                                | 0.0                                                                                 | 63.4                                                                                | 61.7                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                                                                                                | E                                                                                 | C                                                                                                                                                                                                                                                     | C                                                                                 | E                                                                                 | B                                                                                                                                                                                                                                                     | A                                                                                   | E                                                                                   | A                                                                                   | E                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |
| Approach Vol, veh/h                                                                                      |                                                                                   | 3150                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 2783                                                                                                                                                                                                                                                  |                                                                                     |                                                                                     | 170                                                                                 |                                                                                     |                                                                                     | 32                                                                                  | A                                                                                   |
| Approach Delay, s/veh                                                                                    |                                                                                   | 26.6                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 14.4                                                                                                                                                                                                                                                  |                                                                                     |                                                                                     | 65.2                                                                                |                                                                                     |                                                                                     | 61.7                                                                                |                                                                                     |
| Approach LOS                                                                                             |                                                                                   | C                                                                                                                                                                                                                                                     |                                                                                   |                                                                                   | B                                                                                                                                                                                                                                                     |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                                     | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                 | 5                                                                                                                                                                                                                                                     | 6                                                                                   | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                 | 10.2                                                                              | 84.1                                                                                                                                                                                                                                                  | 8.1                                                                               | 17.6                                                                              | 6.7                                                                                                                                                                                                                                                   | 87.6                                                                                | 9.1                                                                                 | 16.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                  | 4.6                                                                               | 6.5                                                                                                                                                                                                                                                   | 4.6                                                                               | 4.6                                                                               | 4.6                                                                                                                                                                                                                                                   | 6.5                                                                                 | 4.6                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                              | 5.6                                                                               | 66.5                                                                                                                                                                                                                                                  | 6.6                                                                               | 21.0                                                                              | 5.0                                                                                                                                                                                                                                                   | 67.1                                                                                | 5.0                                                                                 | 22.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                             | 6.7                                                                               | 62.2                                                                                                                                                                                                                                                  | 4.4                                                                               | 0.0                                                                               | 3.1                                                                                                                                                                                                                                                   | 43.8                                                                                | 4.1                                                                                 | 11.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                  | 0.0                                                                               | 4.2                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 21.6                                                                                | 0.0                                                                                 | 0.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                       |                                                                                   |                                                                                                                                                                                                                                                       | 22.3                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                              |                                                                                   |                                                                                                                                                                                                                                                       | C                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                             |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/23/2019

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |   |   |  |  |  |  |
| Traffic Volume (vph) | 160                                                                               | 2049                                                                              | 591                                                                               | 212                                                                               | 1714                                                                              | 158                                                                               | 475                                                                                | 398                                                                                 | 240                                                                                 | 205                                                                                 | 758                                                                                 | 336                                                                                 |
| Future Volume (vph)  | 160                                                                               | 2049                                                                              | 591                                                                               | 212                                                                               | 1714                                                                              | 158                                                                               | 475                                                                                | 398                                                                                 | 240                                                                                 | 205                                                                                 | 758                                                                                 | 336                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                                | 10.0                                                                                | 5.0                                                                                 | 5.0                                                                                 | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                                | 15.8                                                                                | 8.7                                                                                 | 8.7                                                                                 | 49.8                                                                                | 49.8                                                                                |
| Total Split (s)      | 12.0                                                                              | 46.0                                                                              | 46.0                                                                              | 10.0                                                                              | 44.0                                                                              | 44.0                                                                              | 12.0                                                                               | 51.0                                                                                | 10.0                                                                                | 13.0                                                                                | 52.0                                                                                | 52.0                                                                                |
| Total Split (%)      | 10.0%                                                                             | 38.3%                                                                             | 38.3%                                                                             | 8.3%                                                                              | 36.7%                                                                             | 36.7%                                                                             | 10.0%                                                                              | 42.5%                                                                               | 8.3%                                                                                | 10.8%                                                                               | 43.3%                                                                               | 43.3%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                                | 4.8                                                                                 | 3.2                                                                                 | 3.2                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                                | 1.0                                                                                 | 0.5                                                                                 | 0.5                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                                | 5.8                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                                | Lag                                                                                 | Lead                                                                                | Lead                                                                                | Lead                                                                                | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                               | Max                                                                                 | None                                                                                | None                                                                                | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

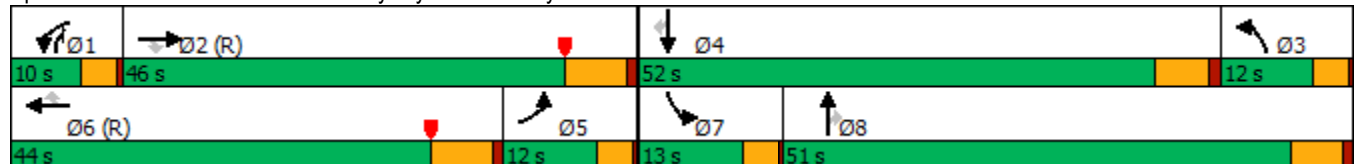
Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/23/2019

|                                                                                                    |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |  |                                                                                      |                                                                                                                                                                          |                                                                                      |                                                                                      |                                                                                      |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                                                                                                         | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations                                                                                |  |    |  |   |    |  |   |    |   |   |   |  |
| Traffic Volume (veh/h)                                                                             | 160                                                                               | 2049                                                                                                                                                                                                                                                  | 591                                                                               | 212                                                                                                                                                                 | 1714                                                                                                                                                                                                                                                  | 158                                                                               | 475                                                                                                                                                                     | 398                                                                                                                                                                                                                                                         | 240                                                                                                                                                                     | 205                                                                                                                                                                     | 758                                                                                                                                                                     | 336                                                                                 |
| Future Volume (veh/h)                                                                              | 160                                                                               | 2049                                                                                                                                                                                                                                                  | 591                                                                               | 212                                                                                                                                                                 | 1714                                                                                                                                                                                                                                                  | 158                                                                               | 475                                                                                                                                                                     | 398                                                                                                                                                                                                                                                         | 240                                                                                                                                                                     | 205                                                                                                                                                                     | 758                                                                                                                                                                     | 336                                                                                 |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach                                                                              |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                     | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                         | No                                                                                                                                                                                                                                                          |                                                                                                                                                                         |                                                                                                                                                                         | No                                                                                                                                                                      |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                    | 1900                                                                                                                                                                                                                                                        | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                               | 178                                                                               | 2277                                                                                                                                                                                                                                                  | 657                                                                               | 236                                                                                                                                                                 | 1904                                                                                                                                                                                                                                                  | 176                                                                               | 528                                                                                                                                                                     | 442                                                                                                                                                                                                                                                         | 267                                                                                                                                                                     | 228                                                                                                                                                                     | 842                                                                                                                                                                     | 373                                                                                 |
| Peak Hour Factor                                                                                   | 0.90                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                                                                                                                                                                                                  | 0.90                                                                              | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                                                                                                        | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                                                                                         | 2128                                                                              | 7569                                                                                                                                                                                                                                                  | 2350                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1423                                                                                                                                                                                                                                                        | 1266                                                                                                                                                                    | 272                                                                                                                                                                     | 1390                                                                                                                                                                    | 620                                                                                 |
| Arrive On Green                                                                                    | 0.39                                                                              | 0.48                                                                                                                                                                                                                                                  | 0.48                                                                              | 0.05                                                                                                                                                                | 0.31                                                                                                                                                                                                                                                  | 0.31                                                                              | 0.07                                                                                                                                                                    | 0.39                                                                                                                                                                                                                                                        | 0.39                                                                                                                                                                    | 0.08                                                                                                                                                                    | 0.38                                                                                                                                                                    | 0.38                                                                                |
| Sat Flow, veh/h                                                                                    | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                    | 3610                                                                                                                                                                                                                                                        | 2834                                                                                                                                                                    | 3510                                                                                                                                                                    | 3610                                                                                                                                                                    | 1610                                                                                |
| Grp Volume(v), veh/h                                                                               | 178                                                                               | 2277                                                                                                                                                                                                                                                  | 657                                                                               | 236                                                                                                                                                                 | 1904                                                                                                                                                                                                                                                  | 176                                                                               | 528                                                                                                                                                                     | 442                                                                                                                                                                                                                                                         | 267                                                                                                                                                                     | 228                                                                                                                                                                     | 842                                                                                                                                                                     | 373                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                           | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                    | 1805                                                                                                                                                                                                                                                        | 1417                                                                                                                                                                    | 1755                                                                                                                                                                    | 1805                                                                                                                                                                    | 1610                                                                                |
| Q Serve(g_s), s                                                                                    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 6.3                                                                                                                                                                 | 37.5                                                                                                                                                                                                                                                  | 24.6                                                                              | 8.3                                                                                                                                                                     | 10.1                                                                                                                                                                                                                                                        | 6.9                                                                                                                                                                     | 7.7                                                                                                                                                                     | 22.4                                                                                                                                                                    | 22.3                                                                                |
| Cycle Q Clear(g_c), s                                                                              | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 6.3                                                                                                                                                                 | 37.5                                                                                                                                                                                                                                                  | 24.6                                                                              | 8.3                                                                                                                                                                     | 10.1                                                                                                                                                                                                                                                        | 6.9                                                                                                                                                                     | 7.7                                                                                                                                                                     | 22.4                                                                                                                                                                    | 22.3                                                                                |
| Prop In Lane                                                                                       | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                             | 2128                                                                              | 7569                                                                                                                                                                                                                                                  | 2350                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1423                                                                                                                                                                                                                                                        | 1266                                                                                                                                                                    | 272                                                                                                                                                                     | 1390                                                                                                                                                                    | 620                                                                                 |
| V/C Ratio(X)                                                                                       | 0.08                                                                              | 0.30                                                                                                                                                                                                                                                  | 0.28                                                                              | 1.28                                                                                                                                                                | 1.17                                                                                                                                                                                                                                                  | 0.35                                                                              | 2.17                                                                                                                                                                    | 0.31                                                                                                                                                                                                                                                        | 0.21                                                                                                                                                                    | 0.84                                                                                                                                                                    | 0.61                                                                                                                                                                    | 0.60                                                                                |
| Avail Cap(c_a), veh/h                                                                              | 2128                                                                              | 7569                                                                                                                                                                                                                                                  | 2350                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1423                                                                                                                                                                                                                                                        | 1266                                                                                                                                                                    | 272                                                                                                                                                                     | 1390                                                                                                                                                                    | 620                                                                                 |
| HCM Platoon Ratio                                                                                  | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(I)                                                                                 | 0.25                                                                              | 0.25                                                                                                                                                                                                                                                  | 0.25                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                           | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 56.8                                                                                                                                                                | 41.2                                                                                                                                                                                                                                                  | 188.5                                                                             | 55.8                                                                                                                                                                    | 25.1                                                                                                                                                                                                                                                        | 20.3                                                                                                                                                                    | 54.6                                                                                                                                                                    | 29.6                                                                                                                                                                    | 29.5                                                                                |
| Incr Delay (d2), s/veh                                                                             | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 161.2                                                                                                                                                               | 85.5                                                                                                                                                                                                                                                  | 1.9                                                                               | 541.9                                                                                                                                                                   | 0.6                                                                                                                                                                                                                                                         | 0.4                                                                                                                                                                     | 19.1                                                                                                                                                                    | 2.0                                                                                                                                                                     | 4.3                                                                                 |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                           | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 6.8                                                                                                                                                                 | 28.0                                                                                                                                                                                                                                                  | 10.6                                                                              | 21.9                                                                                                                                                                    | 4.3                                                                                                                                                                                                                                                         | 2.3                                                                                                                                                                     | 4.0                                                                                                                                                                     | 9.7                                                                                                                                                                     | 9.0                                                                                 |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 218.0                                                                                                                                                               | 126.7                                                                                                                                                                                                                                                 | 190.4                                                                             | 597.8                                                                                                                                                                   | 25.7                                                                                                                                                                                                                                                        | 20.7                                                                                                                                                                    | 73.7                                                                                                                                                                    | 31.6                                                                                                                                                                    | 33.8                                                                                |
| LnGrp LOS                                                                                          | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | F                                                                                                                                                                   | F                                                                                                                                                                                                                                                     | F                                                                                 | F                                                                                                                                                                       | C                                                                                                                                                                                                                                                           | C                                                                                                                                                                       | E                                                                                                                                                                       | C                                                                                                                                                                       | C                                                                                   |
| Approach Vol, veh/h                                                                                |                                                                                   | 3112                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 2316                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         | 1237                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         | 1443                                                                                                                                                                    |                                                                                     |
| Approach Delay, s/veh                                                                              |                                                                                   | 0.0                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                                                                     | 140.8                                                                                                                                                                                                                                                 |                                                                                   |                                                                                                                                                                         | 268.8                                                                                                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 38.8                                                                                                                                                                    |                                                                                     |
| Approach LOS                                                                                       |                                                                                   | A                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     | F                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         | F                                                                                                                                                                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         | D                                                                                                                                                                       |                                                                                     |
| Timer - Assigned Phs                                                                               | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 7                                                                                                                                                                       | 8                                                                                                                                                                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           | 10.0                                                                              | 183.7                                                                                                                                                                                                                                                 | 14.1                                                                              | 52.0                                                                                                                                                                | 149.7                                                                                                                                                                                                                                                 | 44.0                                                                              | 13.0                                                                                                                                                                    | 53.1                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s                                                                            | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 5.8                                                                               | * 5.8                                                                                                                                                               | 6.5                                                                                                                                                                                                                                                   | * 6.5                                                                             | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s                                                                        | 6.3                                                                               | 39.5                                                                                                                                                                                                                                                  | 8.3                                                                               | * 46                                                                                                                                                                | 8.3                                                                                                                                                                                                                                                   | * 38                                                                              | 9.3                                                                                                                                                                     | 45.2                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       | 8.3                                                                               | 2.0                                                                                                                                                                                                                                                   | 10.3                                                                              | 24.4                                                                                                                                                                | 2.0                                                                                                                                                                                                                                                   | 39.5                                                                              | 9.7                                                                                                                                                                     | 12.1                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s                                                                            | 0.0                                                                               | 33.6                                                                                                                                                                                                                                                  | 0.0                                                                               | 6.9                                                                                                                                                                 | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 3.9                                                                                                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| <b>Intersection Summary</b>                                                                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       | 88.2                                                                              |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                                                                                        |                                                                                   |                                                                                                                                                                                                                                                       | F                                                                                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| <b>Notes</b>                                                                                       |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/22/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↱     | ↱     |
| Traffic Volume (vph) | 1926  | 1680  | 281   | 0     | 462   |
| Future Volume (vph)  | 1926  | 1680  | 281   | 0     | 462   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 58.0  | 58.0  | 27.0  | 27.0  | 27.0  |
| Total Split (%)      | 68.2% | 68.2% | 31.8% | 31.8% | 31.8% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 33 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.

|          |      |      |
|----------|------|------|
| → Ø2 (R) | 58 s | 27 s |
| ← Ø6 (R) | 58 s |      |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/22/2019

|                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                  |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     | ↵                                                                                   | ↕                                                                                   | ↶                                                                                   |
| Traffic Volume (veh/h)                                               | 0                                                                                 | 1926                                                                              | 570                                                                               | 0                                                                                 | 1680                                                                              | 153                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 281                                                                                 | 0                                                                                   | 462                                                                                 |
| Future Volume (veh/h)                                                | 0                                                                                 | 1926                                                                              | 570                                                                               | 0                                                                                 | 1680                                                                              | 153                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 281                                                                                 | 0                                                                                   | 462                                                                                 |
| Initial Q (Qb), veh                                                  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                  | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                     | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                               | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              |                                                                                    |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                 | 0                                                                                 | 2049                                                                              | 569                                                                               | 0                                                                                 | 1787                                                                              | 161                                                                               |                                                                                    |                                                                                     |                                                                                     | 433                                                                                 | 0                                                                                   | 243                                                                                 |
| Peak Hour Factor                                                     | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              | 0.94                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.94                                                                                | 0.94                                                                                | 0.94                                                                                |
| Percent Heavy Veh, %                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                           | 0                                                                                 | 2812                                                                              | 733                                                                               | 0                                                                                 | 3335                                                                              | 299                                                                               |                                                                                    |                                                                                     |                                                                                     | 676                                                                                 | 0                                                                                   | 300                                                                                 |
| Arrive On Green                                                      | 0.00                                                                              | 0.69                                                                              | 0.69                                                                              | 0.00                                                                              | 0.69                                                                              | 0.69                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.19                                                                                | 0.00                                                                                | 0.19                                                                                |
| Sat Flow, veh/h                                                      | 0                                                                                 | 4247                                                                              | 1062                                                                              | 0                                                                                 | 5006                                                                              | 434                                                                               |                                                                                    |                                                                                     |                                                                                     | 3619                                                                                | 0                                                                                   | 1608                                                                                |
| Grp Volume(v), veh/h                                                 | 0                                                                                 | 1718                                                                              | 900                                                                               | 0                                                                                 | 1276                                                                              | 672                                                                               |                                                                                    |                                                                                     |                                                                                     | 433                                                                                 | 0                                                                                   | 243                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                             | 0                                                                                 | 1729                                                                              | 1680                                                                              | 0                                                                                 | 1729                                                                              | 1811                                                                              |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 1608                                                                                |
| Q Serve(g_s), s                                                      | 0.0                                                                               | 26.0                                                                              | 30.4                                                                              | 0.0                                                                               | 15.4                                                                              | 15.6                                                                              |                                                                                    |                                                                                     |                                                                                     | 9.4                                                                                 | 0.0                                                                                 | 12.3                                                                                |
| Cycle Q Clear(g_c), s                                                | 0.0                                                                               | 26.0                                                                              | 30.4                                                                              | 0.0                                                                               | 15.4                                                                              | 15.6                                                                              |                                                                                    |                                                                                     |                                                                                     | 9.4                                                                                 | 0.0                                                                                 | 12.3                                                                                |
| Prop In Lane                                                         | 0.00                                                                              |                                                                                   | 0.63                                                                              | 0.00                                                                              |                                                                                   | 0.24                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                               | 0                                                                                 | 2385                                                                              | 1159                                                                              | 0                                                                                 | 2385                                                                              | 1249                                                                              |                                                                                    |                                                                                     |                                                                                     | 676                                                                                 | 0                                                                                   | 300                                                                                 |
| V/C Ratio(X)                                                         | 0.00                                                                              | 0.72                                                                              | 0.78                                                                              | 0.00                                                                              | 0.54                                                                              | 0.54                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.64                                                                                | 0.00                                                                                | 0.81                                                                                |
| Avail Cap(c_a), veh/h                                                | 0                                                                                 | 2385                                                                              | 1159                                                                              | 0                                                                                 | 2385                                                                              | 1249                                                                              |                                                                                    |                                                                                     |                                                                                     | 937                                                                                 | 0                                                                                   | 416                                                                                 |
| HCM Platoon Ratio                                                    | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                   | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.54                                                                              | 0.54                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                             | 0.0                                                                               | 8.1                                                                               | 8.8                                                                               | 0.0                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                    |                                                                                     |                                                                                     | 31.9                                                                                | 0.0                                                                                 | 33.1                                                                                |
| Incr Delay (d2), s/veh                                               | 0.0                                                                               | 1.9                                                                               | 5.1                                                                               | 0.0                                                                               | 0.5                                                                               | 0.9                                                                               |                                                                                    |                                                                                     |                                                                                     | 1.0                                                                                 | 0.0                                                                                 | 8.1                                                                                 |
| Initial Q Delay(d3),s/veh                                            | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                             | 0.0                                                                               | 6.3                                                                               | 8.1                                                                               | 0.0                                                                               | 3.5                                                                               | 3.8                                                                               |                                                                                    |                                                                                     |                                                                                     | 3.9                                                                                 | 0.0                                                                                 | 5.2                                                                                 |
| Unsig. Movement Delay, s/veh                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                 | 0.0                                                                               | 10.0                                                                              | 14.0                                                                              | 0.0                                                                               | 7.0                                                                               | 7.4                                                                               |                                                                                    |                                                                                     |                                                                                     | 32.9                                                                                | 0.0                                                                                 | 41.2                                                                                |
| LnGrp LOS                                                            | A                                                                                 | B                                                                                 | B                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | C                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h                                                  |                                                                                   | 2618                                                                              |                                                                                   |                                                                                   | 1948                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 676                                                                                 |                                                                                     |
| Approach Delay, s/veh                                                |                                                                                   | 11.4                                                                              |                                                                                   |                                                                                   | 7.1                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 35.9                                                                                |                                                                                     |
| Approach LOS                                                         |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                 |                                                                                   | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                             |                                                                                   | 64.1                                                                              |                                                                                   | 20.9                                                                              |                                                                                   | 64.1                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                              |                                                                                   | 5.5                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.5                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                          |                                                                                   | 52.5                                                                              |                                                                                   | 22.0                                                                              |                                                                                   | 52.5                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                         |                                                                                   | 32.4                                                                              |                                                                                   | 14.3                                                                              |                                                                                   | 17.6                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                              |                                                                                   | 16.5                                                                              |                                                                                   | 1.6                                                                               |                                                                                   | 16.9                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                   |                                                                                   |                                                                                   | 13.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                          |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved volume balancing among the lanes for turning movement. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                      |  |                                                                                                                                                                      |                                                                                                                                                                      |  |  |                                                                                    |   |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                               | NBT                                                                                                                                                                 | NBR                                                                                 |
| Lane Configurations  |  |    |    |  |  |   |  |
| Traffic Volume (vph) | 315                                                                               | 1830                                                                                                                                                                                                                                                  | 1211                                                                                                                                                                                                                                                  | 283                                                                               | 708                                                                               | 12                                                                                                                                                                  | 332                                                                                 |
| Future Volume (vph)  | 315                                                                               | 1830                                                                                                                                                                                                                                                  | 1211                                                                                                                                                                                                                                                  | 283                                                                               | 708                                                                               | 12                                                                                                                                                                  | 332                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Split                                                                             | NA                                                                                                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     |                                                                                   | 8                                                                                 | 8                                                                                                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                     | 8                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     | 6                                                                                 | 8                                                                                 | 8                                                                                                                                                                   | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 9.5                                                                               | 10.5                                                                                                                                                                                                                                                  | 33.5                                                                                                                                                                                                                                                  | 33.5                                                                              | 10.0                                                                              | 10.0                                                                                                                                                                | 10.0                                                                                |
| Total Split (s)      | 23.0                                                                              | 52.0                                                                                                                                                                                                                                                  | 33.5                                                                                                                                                                                                                                                  | 33.5                                                                              | 33.0                                                                              | 33.0                                                                                                                                                                | 33.0                                                                                |
| Total Split (%)      | 25.7%                                                                             | 58.1%                                                                                                                                                                                                                                                 | 37.4%                                                                                                                                                                                                                                                 | 37.4%                                                                             | 36.9%                                                                             | 36.9%                                                                                                                                                               | 36.9%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                               | 4.0                                                                               | 4.0                                                                                                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.5                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Lead/Lag             | Lead                                                                              |                                                                                                                                                                                                                                                       | Lag                                                                                                                                                                                                                                                   | Lag                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                                   | Yes                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | Max                                                                               | Max                                                                                                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 89.5

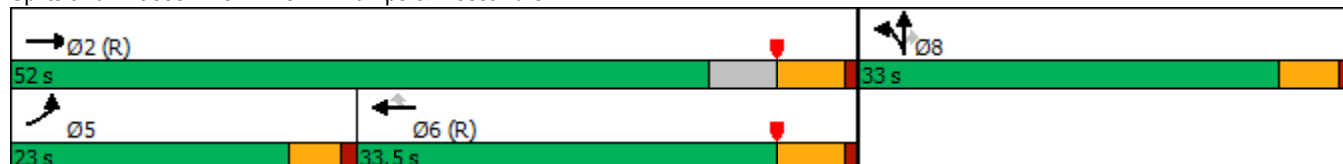
Actuated Cycle Length: 89.5

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/22/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |   |                                                                                      |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)       | 315                                                                               | 1830                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1211                                                                                                                                                                                                                                                  | 283                                                                               | 708                                                                                 | 12                                                                                                                                                                      | 332                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 315                                                                               | 1830                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1211                                                                                                                                                                                                                                                  | 283                                                                               | 708                                                                                 | 12                                                                                                                                                                      | 332                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h         | 335                                                                               | 1947                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1288                                                                                                                                                                                                                                                  | 185                                                                               | 816                                                                                 | 0                                                                                                                                                                       | 128                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor             | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                                | 0.94                                                                                                                                                                    | 0.94                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                   | 368                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1654                                                                                                                                                                                                                                                  | 503                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green              | 0.20                                                                              | 0.57                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.32                                                                                                                                                                                                                                                  | 0.32                                                                              | 0.31                                                                                | 0.00                                                                                                                                                                    | 0.31                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h              | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1576                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h         | 335                                                                               | 1947                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1288                                                                                                                                                                                                                                                  | 185                                                                               | 816                                                                                 | 0                                                                                                                                                                       | 128                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1576                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 16.3                                                                              | 23.1                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 20.3                                                                                                                                                                                                                                                  | 8.2                                                                               | 18.0                                                                                | 0.0                                                                                                                                                                     | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 16.3                                                                              | 23.1                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 20.3                                                                                                                                                                                                                                                  | 8.2                                                                               | 18.0                                                                                | 0.0                                                                                                                                                                     | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 368                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1654                                                                                                                                                                                                                                                  | 503                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.91                                                                              | 0.66                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 0.78                                                                                                                                                                                                                                                  | 0.37                                                                              | 0.72                                                                                | 0.00                                                                                                                                                                    | 0.26                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 372                                                                               | 2968                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                 | 1654                                                                                                                                                                                                                                                  | 503                                                                               | 1126                                                                                | 0                                                                                                                                                                       | 501                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.52                                                                              | 0.52                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 35.0                                                                              | 13.2                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 27.8                                                                                                                                                                                                                                                  | 23.7                                                                              | 27.6                                                                                | 0.0                                                                                                                                                                     | 23.2                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 15.5                                                                              | 0.6                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 3.7                                                                                                                                                                                                                                                   | 2.1                                                                               | 4.1                                                                                 | 0.0                                                                                                                                                                     | 1.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 8.1                                                                               | 7.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 8.0                                                                                                                                                                                                                                                   | 3.0                                                                               | 7.8                                                                                 | 0.0                                                                                                                                                                     | 2.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 50.6                                                                              | 13.8                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 31.5                                                                                                                                                                                                                                                  | 25.7                                                                              | 31.6                                                                                | 0.0                                                                                                                                                                     | 24.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | D                                                                                 | B                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | C                                                                                 | C                                                                                   | A                                                                                                                                                                       | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 2282                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1473                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 944                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 19.2                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 30.7                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 30.7                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 57.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 22.8                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 34.2                                                                                |                                                                                                                                                                         |                                                                                     | 33.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                                 |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 46.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 18.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 28.0                                                                                |                                                                                                                                                                         |                                                                                     | 28.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 25.1                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 18.3                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 22.3                                                                                |                                                                                                                                                                         |                                                                                     | 20.0                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 13.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 3.8                                                                                 |                                                                                                                                                                         |                                                                                     | 2.4                                                                                 |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 25.1                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**APPENDIX 6.3:**

**OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT CONDITIONS TRAFFIC  
SIGNAL WARRANT ANALYSIS WORKSHEETS**

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### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2023) Without Project Conditions - Weekday PM Peak Hour**

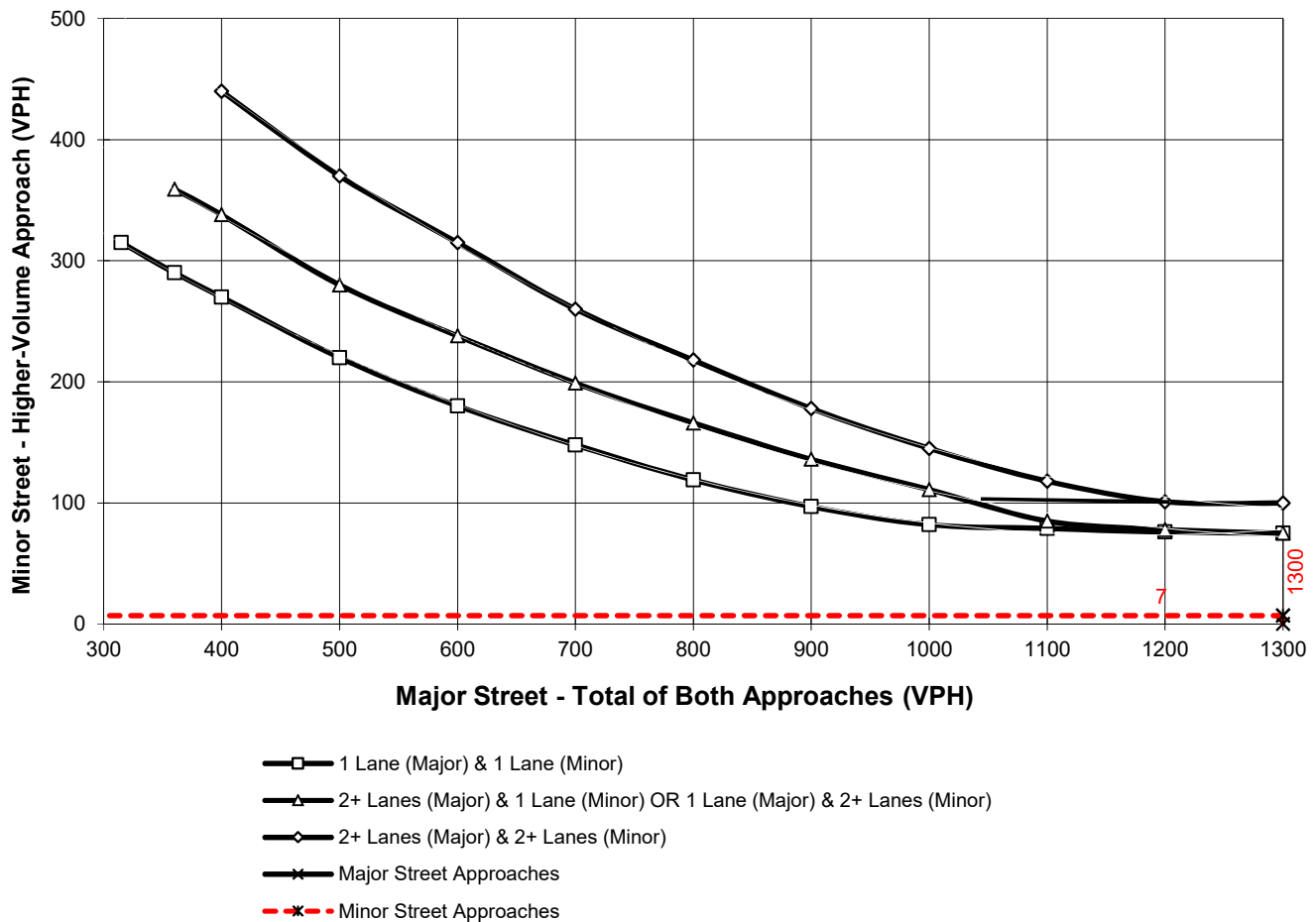
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **5078**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Private Driveway**

High Volume Approach (VPH) = **7**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes  
and 75 vph applies as the lower threshold for a minor-street approach with one lane

### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2023) Without Project Conditions - Weekday PM Peak Hour**

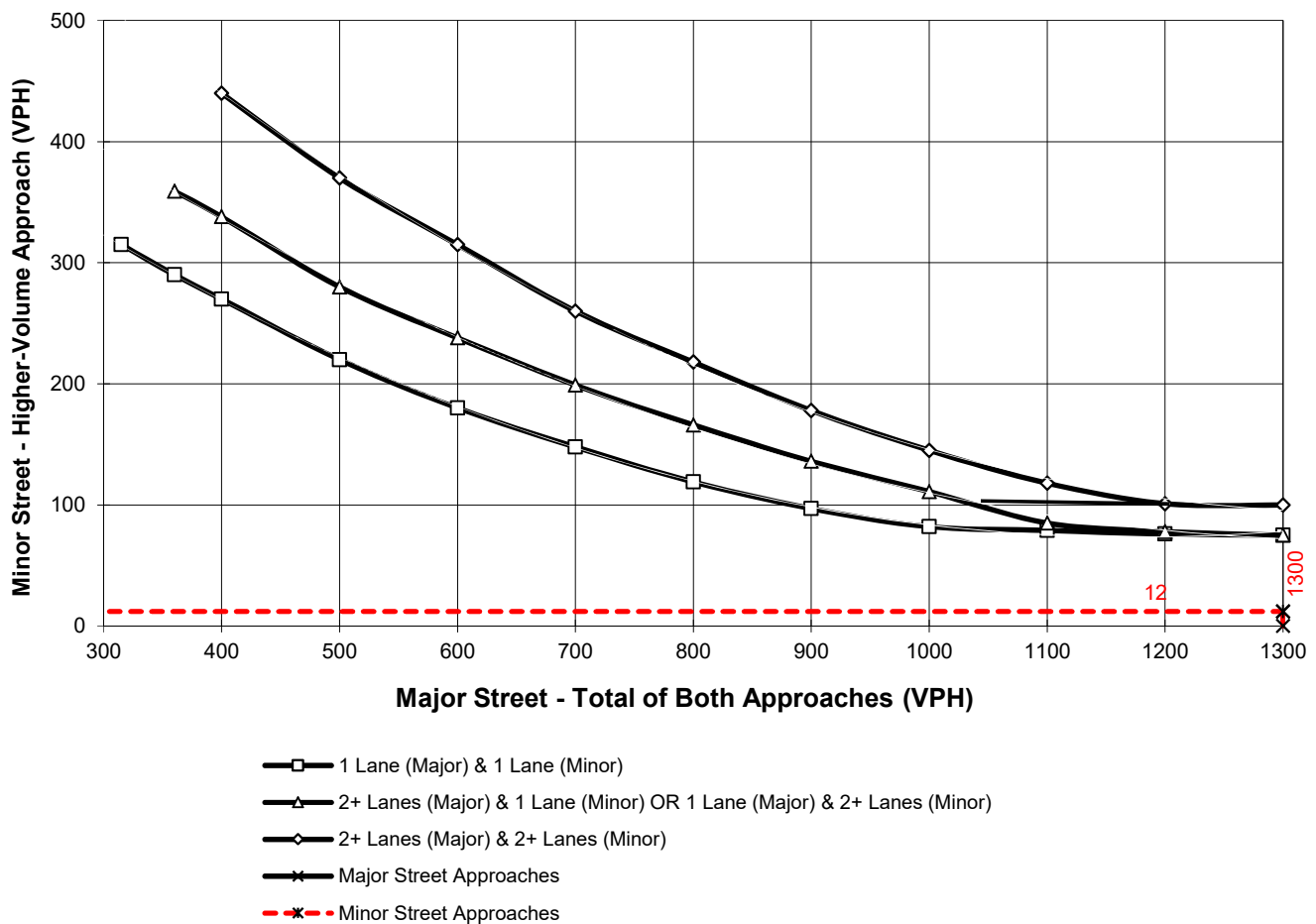
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **5095**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Vista Grande**

High Volume Approach (VPH) = **12**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

**APPENDIX 6.4:**

**OPENING YEAR CUMULATIVE (2023) WITH PROJECT CONDITIONS TRAFFIC SIGNAL  
WARRANT ANALYSIS WORKSHEETS**

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### Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

|                                                                                 |    |     |    |                                            |                                               |                                                                       |
|---------------------------------------------------------------------------------|----|-----|----|--------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------|
| DIST                                                                            | CO | RTE | PM | CALC                                       | TRAFFIC CONDITIONS                            | 2023 WP                                                               |
| Jurisdiction: <u>City of Riverside</u>                                          |    |     |    | CHK                                        | <u>RV</u>                                     | DATE <u>05/23/19</u>                                                  |
| Major Street: <u>Barton Street</u>                                              |    |     |    |                                            |                                               | DATE <u>05/23/19</u>                                                  |
| Minor Street: <u>Driveway 1</u>                                                 |    |     |    |                                            | Critical Approach Speed (Major) <u>55</u> mph |                                                                       |
|                                                                                 |    |     |    |                                            | Critical Approach Speed (Minor) <u>25</u> mph |                                                                       |
| Major Street Approach Lanes = <u>1</u> lane                                     |    |     |    | Minor Street Approach Lanes: <u>1</u> lane |                                               |                                                                       |
| Major Street Future ADT = <u>3,672</u> vpd                                      |    |     |    | Minor Street Future ADT = <u>788</u> vpd   |                                               |                                                                       |
| Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... |    |     |    |                                            |                                               | <input checked="" type="checkbox"/><br>or<br><input type="checkbox"/> |
| In built up area of isolated community of < 10,000 population .....             |    |     |    |                                            |                                               | <b>RURAL (R)</b>                                                      |

**(Based on Estimated Average Daily Traffic - See Note)**

| URBAN                                                                               |              | RURAL                                               |              | Minimum Requirements<br>EADT                                      |        |                                                                                       |       |
|-------------------------------------------------------------------------------------|--------------|-----------------------------------------------------|--------------|-------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------|-------|
| <b>CONDITION A - Minimum Vehicular Volume</b>                                       |              | <b>XX</b>                                           |              | Vehicles Per Day on<br>Major Street<br>(Total of Both Approaches) |        | Vehicles Per Day<br>on Higher-Volume<br>Minor Street Approach<br>(One Direction Only) |       |
| <u>Satisfied</u>                                                                    |              | <u>Not Satisfied</u>                                |              |                                                                   |        |                                                                                       |       |
|                                                                                     |              | <b>XX</b>                                           |              |                                                                   |        |                                                                                       |       |
| Number of lanes for moving traffic on each approach                                 |              | Number of lanes for moving traffic on each approach |              |                                                                   |        |                                                                                       |       |
| Major Street                                                                        | Minor Street | Major Street                                        | Minor Street | Urban                                                             | Rural  | Urban                                                                                 | Rural |
| 1 <b>3,672</b>                                                                      | 1 <b>788</b> | 1                                                   | 1            | 8,000                                                             | 5,600  | 2,400                                                                                 | 1,680 |
| 2 +                                                                                 | 1            | 2 +                                                 | 1            | 9,600                                                             | 6,720  | 2,400                                                                                 | 1,680 |
| 2 +                                                                                 | 2 +          | 2 +                                                 | 2 +          | 9,600                                                             | 6,720  | 3,200                                                                                 | 2,240 |
| 1                                                                                   | 2 +          | 2 +                                                 | 2 +          | 8,000                                                             | 5,600  | 3,200                                                                                 | 2,240 |
| <b>CONDITION B - Interruption of Continuous Traffic</b>                             |              | <b>XX</b>                                           |              | Vehicles Per Day<br>on Major Street<br>(Total of Both Approaches) |        | Vehicles Per Day<br>on Higher-Volume<br>Minor Street Approach<br>(One Direction Only) |       |
| <u>Satisfied</u>                                                                    |              | <u>Not Satisfied</u>                                |              |                                                                   |        |                                                                                       |       |
|                                                                                     |              | <b>XX</b>                                           |              |                                                                   |        |                                                                                       |       |
| Number of lanes for moving traffic on each approach                                 |              | Number of lanes for moving traffic on each approach |              |                                                                   |        |                                                                                       |       |
| Major Street                                                                        | Minor Street | Major Street                                        | Minor Street | Urban                                                             | Rural  | Urban                                                                                 | Rural |
| 1 <b>3,672</b>                                                                      | 1 <b>788</b> | 1                                                   | 1            | 12,000                                                            | 8,400  | 1,200                                                                                 | 850   |
| 2 +                                                                                 | 1            | 2 +                                                 | 1            | 14,400                                                            | 10,080 | 1,200                                                                                 | 850   |
| 2 +                                                                                 | 2 +          | 2 +                                                 | 2 +          | 14,400                                                            | 10,080 | 1,600                                                                                 | 1,120 |
| 1                                                                                   | 2 +          | 2 +                                                 | 2 +          | 12,000                                                            | 8,400  | 1,600                                                                                 | 1,120 |
| <b>Combination of CONDITIONS A + B</b>                                              |              | <b>XX</b>                                           |              | 2 CONDITIONS<br>80%                                               |        | 2 CONDITIONS<br>80%                                                                   |       |
| <u>Satisfied</u>                                                                    |              | <u>Not Satisfied</u>                                |              |                                                                   |        |                                                                                       |       |
|                                                                                     |              | <b>XX</b>                                           |              |                                                                   |        |                                                                                       |       |
| No one condition satisfied, but following conditions<br>fulfilled 80% of more ..... |              | A                                                   |              |                                                                   |        |                                                                                       |       |
|                                                                                     |              | <b>47%</b>                                          |              |                                                                   |        |                                                                                       |       |
|                                                                                     |              | <b>44%</b>                                          |              |                                                                   |        |                                                                                       |       |

**Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.**

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Cumulative (2023) With Project Conditions - Weekday PM Peak Hour**

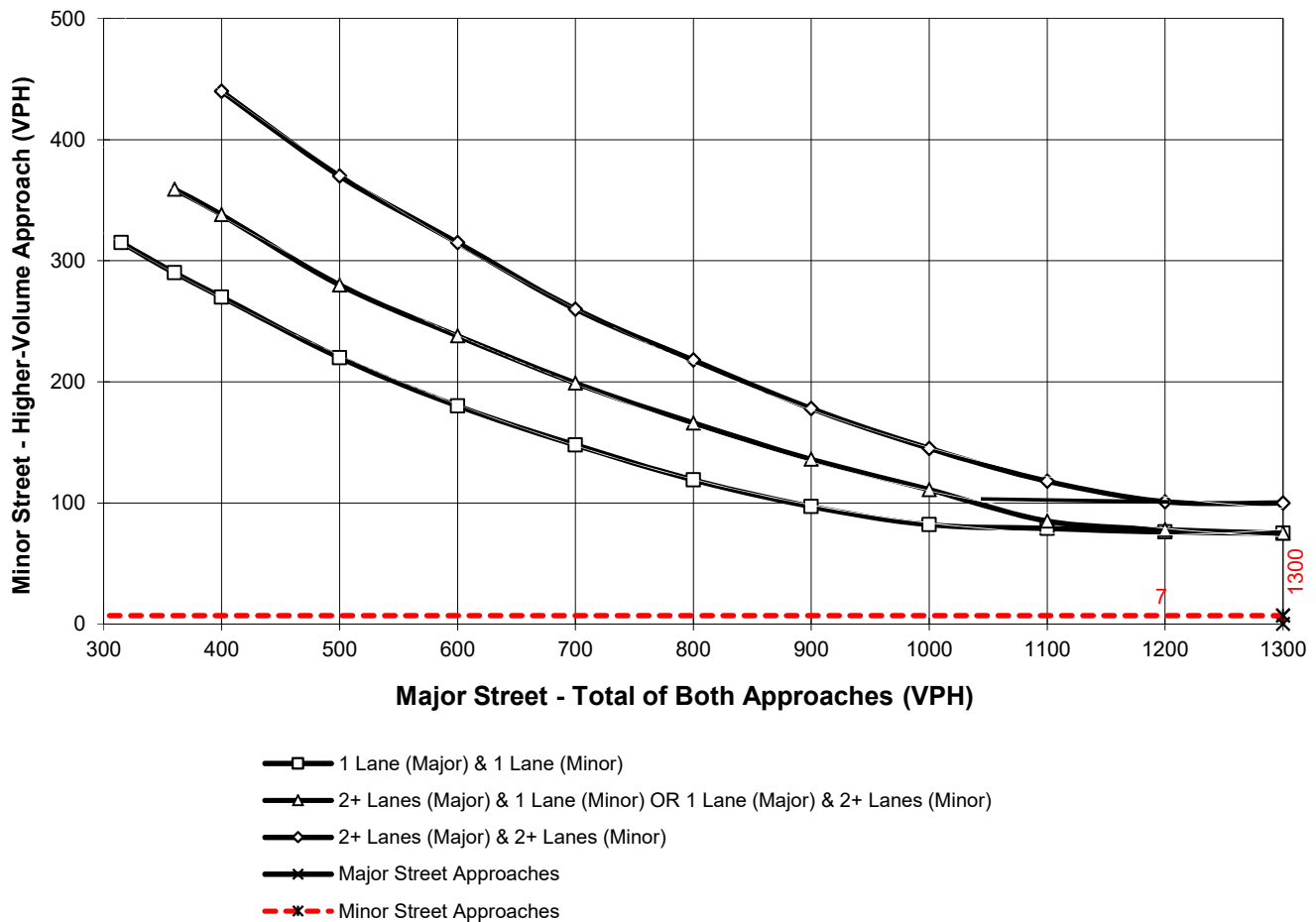
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **5091**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Private Driveway**

High Volume Approach (VPH) = **7**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes  
and 75 vph applies as the lower threshold for a minor-street approach with one lane

### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

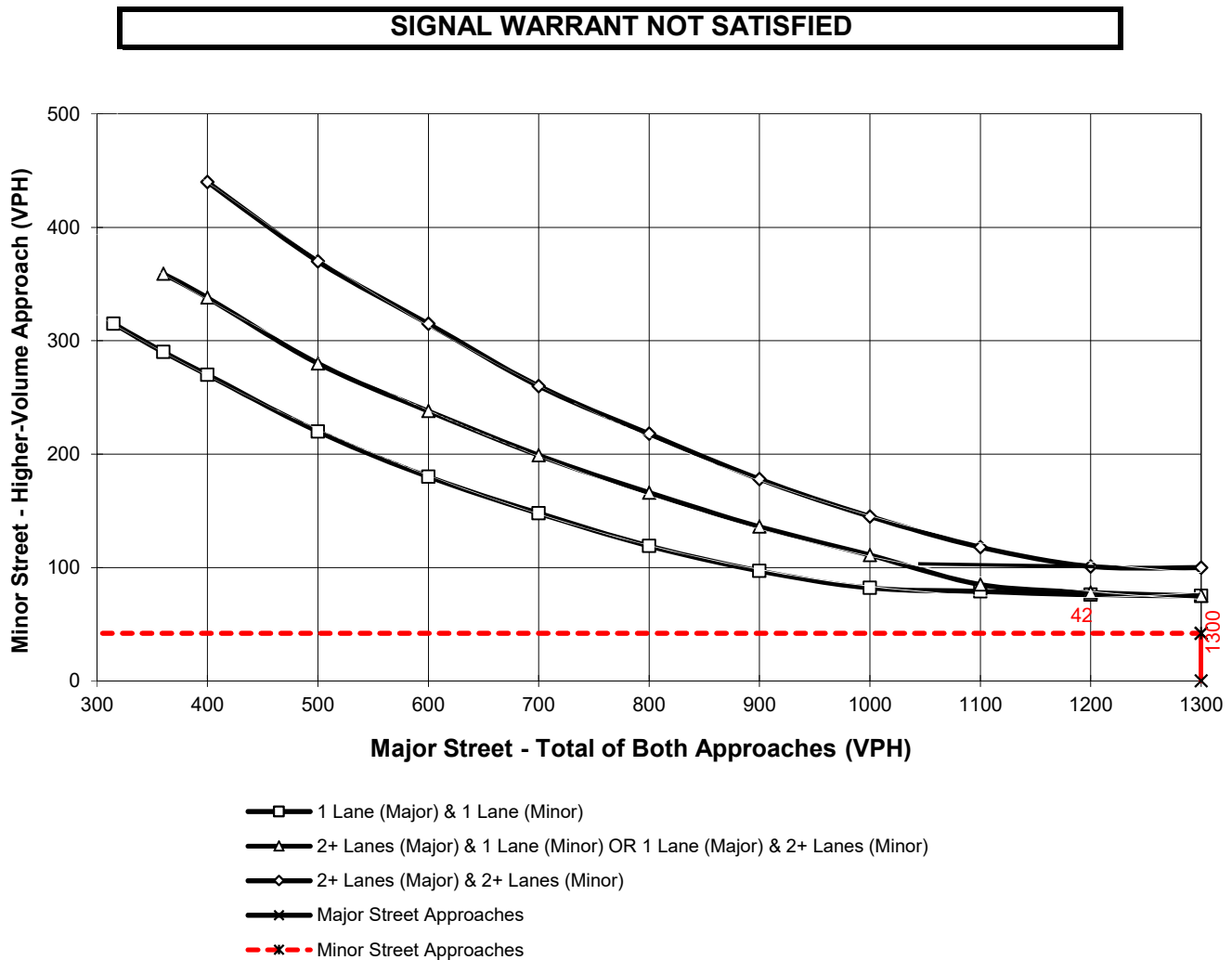
Traffic Conditions = **Opening Year Cumulative (2023) With Project Conditions - Weekday PM Peak Hour**

Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **5139**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Vista Grande**

High Volume Approach (VPH) = **42**  
Number of Approach Lanes Minor Street = **1**



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes  
and 75 vph applies as the lower threshold for a minor-street approach with one lane

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## **APPENDIX 6.5:**

### **OPENING YEAR CUMULATIVE (2023) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS WORKSHEETS**

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## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 1364 | 3130 | 264  | 257  | 258  |
| v/c Ratio               | 0.39 | 0.89 | 0.81 | 0.85 | 0.83 |
| Control Delay           | 4.8  | 5.2  | 53.8 | 54.4 | 51.8 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 4.8  | 5.2  | 53.8 | 54.4 | 51.8 |
| Queue Length 50th (ft)  | 76   | 175  | 141  | 127  | 122  |
| Queue Length 95th (ft)  | 99   | m163 | #264 | #264 | #249 |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3473 | 3530 | 343  | 320  | 328  |
| Starvation Cap Reductn  | 0    | 2    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.39 | 0.89 | 0.77 | 0.80 | 0.79 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 104  | 1172 | 1878 | 195  | 568  | 575  | 225  |
| v/c Ratio               | 0.90 | 0.44 | 0.92 | 0.26 | 0.91 | 0.96 | 0.36 |
| Control Delay           | 96.3 | 14.4 | 33.3 | 3.7  | 46.9 | 56.1 | 12.3 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 96.3 | 14.4 | 33.3 | 3.7  | 46.9 | 56.1 | 12.3 |
| Queue Length 50th (ft)  | 54   | 168  | 341  | 0    | 297  | 323  | 46   |
| Queue Length 95th (ft)  | #133 | 201  | #447 | 39   | #507 | #558 | 105  |
| Internal Link Dist (ft) |      | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200  |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 116  | 2654 | 2044 | 739  | 625  | 600  | 624  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.90 | 0.44 | 0.92 | 0.26 | 0.91 | 0.96 | 0.36 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 2599 | 1937 | 269  | 255  | 254  |
| v/c Ratio               | 0.78 | 0.57 | 0.72 | 0.74 | 0.72 |
| Control Delay           | 12.2 | 9.1  | 41.9 | 39.8 | 38.2 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 12.2 | 9.1  | 41.9 | 39.8 | 38.2 |
| Queue Length 50th (ft)  | 313  | 191  | 137  | 119  | 113  |
| Queue Length 95th (ft)  | 411  | 249  | 217  | 204  | 193  |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3339 | 3377 | 443  | 405  | 415  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.78 | 0.57 | 0.61 | 0.63 | 0.61 |
| Intersection Summary    |      |      |      |      |      |

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 306  | 1941 | 1286 | 301  | 394  | 398  | 318  |
| v/c Ratio               | 0.87 | 0.66 | 0.77 | 0.42 | 0.74 | 0.77 | 0.59 |
| Control Delay           | 59.7 | 14.6 | 31.1 | 4.9  | 37.1 | 39.4 | 23.9 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 59.7 | 14.6 | 31.1 | 4.9  | 37.1 | 39.4 | 23.9 |
| Queue Length 50th (ft)  | 166  | 257  | 241  | 0    | 207  | 218  | 114  |
| Queue Length 95th (ft)  | #301 | 306  | 296  | 56   | #325 | #372 | 207  |
| Internal Link Dist (ft) |      | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200  |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 373  | 2955 | 1680 | 715  | 536  | 515  | 538  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.82 | 0.66 | 0.77 | 0.42 | 0.74 | 0.77 | 0.59 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

**APPENDIX 6.6:**

**OPENING YEAR CUMULATIVE (2023) WITH PROJECT CONDITIONS OFF-RAMP  
QUEUING ANALYSIS WORKSHEETS**

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## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 1380 | 3155 | 264  | 270  | 271  |
| v/c Ratio               | 0.40 | 0.90 | 0.81 | 0.88 | 0.86 |
| Control Delay           | 4.9  | 5.5  | 52.9 | 59.4 | 56.1 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 4.9  | 5.5  | 52.9 | 59.4 | 56.1 |
| Queue Length 50th (ft)  | 78   | 175  | 141  | 136  | 130  |
| Queue Length 95th (ft)  | 101  | m169 | #264 | #283 | #268 |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3462 | 3521 | 343  | 320  | 328  |
| Starvation Cap Reductn  | 0    | 2    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.40 | 0.90 | 0.77 | 0.84 | 0.83 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBL   | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|-------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 112   | 1173 | 1882 | 195  | 579  | 585  | 225  |
| v/c Ratio               | 0.97  | 0.44 | 0.92 | 0.26 | 0.93 | 0.97 | 0.36 |
| Control Delay           | 112.2 | 14.3 | 33.5 | 3.7  | 49.6 | 59.7 | 12.3 |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 112.2 | 14.3 | 33.5 | 3.7  | 49.6 | 59.7 | 12.3 |
| Queue Length 50th (ft)  | 59    | 168  | 342  | 0    | 307  | 330  | 46   |
| Queue Length 95th (ft)  | #152  | 202  | #449 | 39   | #522 | #572 | 105  |
| Internal Link Dist (ft) |       | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200   |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 116   | 2654 | 2044 | 739  | 625  | 600  | 624  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.97  | 0.44 | 0.92 | 0.26 | 0.93 | 0.97 | 0.36 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 2655 | 1950 | 269  | 261  | 260  |
| v/c Ratio               | 0.80 | 0.58 | 0.72 | 0.76 | 0.73 |
| Control Delay           | 12.7 | 9.2  | 41.8 | 41.0 | 39.2 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 12.7 | 9.2  | 41.8 | 41.0 | 39.2 |
| Queue Length 50th (ft)  | 330  | 194  | 136  | 123  | 116  |
| Queue Length 95th (ft)  | 431  | 252  | 217  | 210  | 198  |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3338 | 3376 | 443  | 404  | 415  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.80 | 0.58 | 0.61 | 0.65 | 0.63 |
| Intersection Summary    |      |      |      |      |      |

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/22/2019



| Lane Group              | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 335  | 1947 | 1288 | 301  | 399  | 402  | 318  |
| v/c Ratio               | 0.92 | 0.66 | 0.78 | 0.43 | 0.74 | 0.78 | 0.59 |
| Control Delay           | 67.4 | 14.6 | 31.9 | 5.0  | 37.6 | 39.9 | 23.9 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 67.4 | 14.6 | 31.9 | 5.0  | 37.6 | 39.9 | 23.9 |
| Queue Length 50th (ft)  | 186  | 258  | 242  | 0    | 210  | 221  | 114  |
| Queue Length 95th (ft)  | #340 | 308  | 297  | 56   | #333 | #380 | 207  |
| Internal Link Dist (ft) |      | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200  |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 373  | 2955 | 1648 | 707  | 536  | 515  | 538  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.90 | 0.66 | 0.78 | 0.43 | 0.74 | 0.78 | 0.59 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

**APPENDIX 6.7:**

**OPENING YEAR CUMULATIVE (2023) WITH PROJECT CONDITIONS INTERSECTION  
OPERATIONS ANALYSIS WORKSHEETS WITH IMPROVEMENTS**

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| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0    |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      | ↑↑↑  |      |      | ↑↑↑  |      |      | ↑    |      |      | ↑    |      |      |
| Traffic Vol, veh/h       | 0    | 1603 | 8    | 0    | 2858 | 0    | 0    | 0    | 6    | 0    | 0    | 0    |
| Future Vol, veh/h        | 0    | 1603 | 8    | 0    | 2858 | 0    | 0    | 0    | 6    | 0    | 0    | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | 0    | -    | -    | 0    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 0    | 1742 | 9    | 0    | 3107 | 0    | 0    | 0    | 7    | 0    | 0    | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |   |      | Minor2 |   |      |
|----------------------|--------|---|---|--------|---|---|--------|---|------|--------|---|------|
| Conflicting Flow All | -      | 0 | 0 | -      | - | 0 | -      | - | 876  | -      | - | 1554 |
| Stage 1              | -      | - | - | -      | - | - | -      | - | -    | -      | - | -    |
| Stage 2              | -      | - | - | -      | - | - | -      | - | -    | -      | - | -    |
| Critical Hdwy        | -      | - | - | -      | - | - | -      | - | 7.1  | -      | - | 7.1  |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | -      | - | -    | -      | - | -    |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | -      | - | -    | -      | - | -    |
| Follow-up Hdwy       | -      | - | - | -      | - | - | -      | - | 3.9  | -      | - | 3.9  |
| Pot Cap-1 Maneuver   | 0      | - | - | 0      | - | - | 0      | 0 | *553 | 0      | 0 | *251 |
| Stage 1              | 0      | - | - | 0      | - | - | 0      | 0 | -    | 0      | 0 | -    |
| Stage 2              | 0      | - | - | 0      | - | - | 0      | 0 | -    | 0      | 0 | -    |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | - | 1    | -      | - | 1    |
| Mov Cap-1 Maneuver   | -      | - | - | -      | - | - | -      | - | *553 | -      | - | *251 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | -      | - | -    | -      | - | -    |
| Stage 1              | -      | - | - | -      | - | - | -      | - | -    | -      | - | -    |
| Stage 2              | -      | - | - | -      | - | - | -      | - | -    | -      | - | -    |

| Approach             | EB | WB | NB   | SB |
|----------------------|----|----|------|----|
| HCM Control Delay, s | 0  | 0  | 11.6 | 0  |
| HCM LOS              |    |    | B    | A  |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-----|-------|
| Capacity (veh/h)      | 553   | -   | -   | -   | -   | -     |
| HCM Lane V/C Ratio    | 0.012 | -   | -   | -   | -   | -     |
| HCM Control Delay (s) | 11.6  | -   | -   | -   | -   | 0     |
| HCM Lane LOS          | B     | -   | -   | -   | -   | A     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | -   | -     |

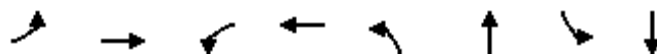
| Notes                      |                        |                            |                                |
|----------------------------|------------------------|----------------------------|--------------------------------|
| ~: Volume exceeds capacity | \$: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/10/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 4    | 1598  | 13   | 2854  | 3     | 0     | 11    | 0     |
| Future Volume (vph)  | 4    | 1598  | 13   | 2854  | 3     | 0     | 11    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.2  | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 9.6  | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 8.0% | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 3.2  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.2  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag  | Lag   | Lead | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/10/2020

|                              |  |                                                                                                                                                                            |  |  |                                                                                                                                                                            |  |  |                                                                                         |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                         | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                         | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                        | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  | <br><br> |                                                                                   |  | <br><br> |                                                                                   |                                                                                     | <br> |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 1598                                                                                                                                                                                                                                                        | 8                                                                                 | 13                                                                                | 2854                                                                                                                                                                                                                                                        | 35                                                                                | 3                                                                                   | 0                                                                                                                                                                          | 15                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1598                                                                                                                                                                                                                                                        | 8                                                                                 | 13                                                                                | 2854                                                                                                                                                                                                                                                        | 35                                                                                | 3                                                                                   | 0                                                                                                                                                                          | 15                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                            | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                  |                                                                                                                                                                            |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                       | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 1737                                                                                                                                                                                                                                                        | 9                                                                                 | 14                                                                                | 3102                                                                                                                                                                                                                                                        | 38                                                                                | 3                                                                                   | 0                                                                                                                                                                          | 16                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                                                                                                       | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 111                                                                               | 4273                                                                                                                                                                                                                                                        | 22                                                                                | 28                                                                                | 3895                                                                                                                                                                                                                                                        | 48                                                                                | 41                                                                                  | 7                                                                                                                                                                          | 74                                                                                  | 142                                                                                 | 0                                                                                   | 88                                                                                  |
| Arrive On Green              | 0.12                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 0.02                                                                              | 0.74                                                                                                                                                                                                                                                        | 0.74                                                                              | 0.05                                                                                | 0.00                                                                                                                                                                       | 0.05                                                                                | 0.05                                                                                | 0.00                                                                                | 0.05                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5325                                                                                                                                                                                                                                                        | 28                                                                                | 1810                                                                              | 5282                                                                                                                                                                                                                                                        | 64                                                                                | 122                                                                                 | 133                                                                                                                                                                        | 1361                                                                                | 1419                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 1128                                                                                                                                                                                                                                                        | 618                                                                               | 14                                                                                | 2027                                                                                                                                                                                                                                                        | 1113                                                                              | 19                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 1895                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 1888                                                                              | 1616                                                                                | 0                                                                                                                                                                          | 0                                                                                   | 1419                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.2                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.9                                                                               | 44.6                                                                                                                                                                                                                                                        | 45.3                                                                              | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.9                                                                               | 44.6                                                                                                                                                                                                                                                        | 45.3                                                                              | 1.3                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.01                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.03                                                                              | 0.16                                                                                |                                                                                                                                                                            | 0.84                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 111                                                                               | 2774                                                                                                                                                                                                                                                        | 1520                                                                              | 28                                                                                | 2550                                                                                                                                                                                                                                                        | 1393                                                                              | 123                                                                                 | 0                                                                                                                                                                          | 0                                                                                   | 142                                                                                 | 0                                                                                   | 88                                                                                  |
| V/C Ratio(X)                 | 0.04                                                                              | 0.41                                                                                                                                                                                                                                                        | 0.41                                                                              | 0.50                                                                              | 0.79                                                                                                                                                                                                                                                        | 0.80                                                                              | 0.15                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                | 0.08                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 111                                                                               | 2774                                                                                                                                                                                                                                                        | 1520                                                                              | 78                                                                                | 2550                                                                                                                                                                                                                                                        | 1393                                                                              | 179                                                                                 | 0                                                                                                                                                                          | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                        | 2.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 0.28                                                                              | 0.28                                                                                                                                                                                                                                                        | 0.28                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 49.5                                                                              | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 58.6                                                                              | 10.0                                                                                                                                                                                                                                                        | 10.1                                                                              | 54.2                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 54.0                                                                                | 0.0                                                                                 | 53.7                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.4                                                                                                                                                                                                                                                         | 0.8                                                                               | 1.4                                                                               | 0.8                                                                                                                                                                                                                                                         | 1.4                                                                               | 0.6                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.2                                                                                                                                                                                                                                                         | 0.3                                                                               | 0.4                                                                               | 11.9                                                                                                                                                                                                                                                        | 13.4                                                                              | 0.6                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 49.6                                                                              | 0.4                                                                                                                                                                                                                                                         | 0.8                                                                               | 60.0                                                                              | 10.7                                                                                                                                                                                                                                                        | 11.5                                                                              | 54.8                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 54.2                                                                                | 0.0                                                                                 | 53.7                                                                                |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                           | A                                                                                 | E                                                                                 | B                                                                                                                                                                                                                                                           | B                                                                                 | D                                                                                   | A                                                                                                                                                                          | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 1750                                                                              |                                                                                                                                                                                                                                                             | 3154                                                                              |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   | 19                                                                                  |                                                                                                                                                                            | 13                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.7                                                                               |                                                                                                                                                                                                                                                             | 11.2                                                                              |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   | 54.8                                                                                |                                                                                                                                                                            | 54.2                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                             | B                                                                                 |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   | D                                                                                   |                                                                                                                                                                            | D                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                             | 3                                                                                 |                                                                                   | 4                                                                                                                                                                                                                                                           |                                                                                   | 6                                                                                   |                                                                                                                                                                            | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.2                                                                              |                                                                                                                                                                                                                                                             | 6.1                                                                               |                                                                                   | 102.8                                                                                                                                                                                                                                                       |                                                                                   | 11.2                                                                                |                                                                                                                                                                            | 13.8                                                                                |                                                                                     | 95.0                                                                                |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                             | * 4.2                                                                             |                                                                                   | 6.5                                                                                                                                                                                                                                                         |                                                                                   | 4.6                                                                                 |                                                                                                                                                                            | 6.5                                                                                 |                                                                                     | * 6.5                                                                               |                                                                                     |
| Max Green Setting (Gmax), s  | 10.8                                                                              |                                                                                                                                                                                                                                                             | * 5.2                                                                             |                                                                                   | 88.7                                                                                                                                                                                                                                                        |                                                                                   | 10.8                                                                                |                                                                                                                                                                            | 5.4                                                                                 |                                                                                     | * 89                                                                                |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.3                                                                               |                                                                                                                                                                                                                                                             | 2.9                                                                               |                                                                                   | 2.0                                                                                                                                                                                                                                                         |                                                                                   | 2.8                                                                                 |                                                                                                                                                                            | 2.2                                                                                 |                                                                                     | 47.3                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                             | 0.0                                                                               |                                                                                   | 16.9                                                                                                                                                                                                                                                        |                                                                                   | 0.0                                                                                 |                                                                                                                                                                            | 0.0                                                                                 |                                                                                     | 34.7                                                                                |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                             | 7.8                                                                               |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                             | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

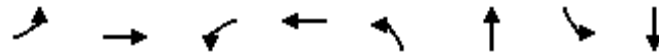
| Intersection               |        |                        |      |        |                            |       |        |      |                                |        |      |      |
|----------------------------|--------|------------------------|------|--------|----------------------------|-------|--------|------|--------------------------------|--------|------|------|
| Int Delay, s/veh           | 0      |                        |      |        |                            |       |        |      |                                |        |      |      |
| Movement                   | EBL    | EBT                    | EBR  | WBL    | WBT                        | WBR   | NBL    | NBT  | NBR                            | SBL    | SBT  | SBR  |
| Lane Configurations        | ↑↑↑    |                        |      | ↑↑↑    |                            |       | ↗      |      |                                | ↗      |      |      |
| Traffic Vol, veh/h         | 0      | 2688                   | 4    | 0      | 2424                       | 0     | 0      | 0    | 8                              | 0      | 0    | 0    |
| Future Vol, veh/h          | 0      | 2688                   | 4    | 0      | 2424                       | 0     | 0      | 0    | 8                              | 0      | 0    | 0    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0    | 0      | 0                          | 0     | 0      | 0    | 0                              | 0      | 0    | 0    |
| Sign Control               | Free   | Free                   | Free | Free   | Free                       | Free  | Stop   | Stop | Stop                           | Stop   | Stop | Stop |
| RT Channelized             | -      | -                      | None | -      | -                          | None  | -      | -    | None                           | -      | -    | None |
| Storage Length             | -      | -                      | -    | -      | -                          | -     | -      | -    | 0                              | -      | -    | 0    |
| Veh in Median Storage, #   | -      | 0                      | -    | -      | 0                          | -     | -      | 0    | -                              | -      | 0    | -    |
| Grade, %                   | -      | 0                      | -    | -      | 0                          | -     | -      | 0    | -                              | -      | 0    | -    |
| Peak Hour Factor           | 92     | 92                     | 92   | 92     | 92                         | 92    | 92     | 92   | 92                             | 92     | 92   | 92   |
| Heavy Vehicles, %          | 0      | 0                      | 0    | 0      | 0                          | 0     | 0      | 0    | 0                              | 0      | 0    | 0    |
| Mvmt Flow                  | 0      | 2922                   | 4    | 0      | 2635                       | 0     | 0      | 0    | 9                              | 0      | 0    | 0    |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Major/Minor                | Major1 |                        |      | Major2 |                            |       | Minor1 |      |                                | Minor2 |      |      |
| Conflicting Flow All       | -      | 0                      | 0    | -      | -                          | 0     | -      | -    | 1463                           | -      | -    | 1318 |
| Stage 1                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 2                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Critical Hdwy              | -      | -                      | -    | -      | -                          | -     | -      | -    | 7.1                            | -      | -    | 7.1  |
| Critical Hdwy Stg 1        | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Critical Hdwy Stg 2        | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Follow-up Hdwy             | -      | -                      | -    | -      | -                          | -     | -      | -    | 3.9                            | -      | -    | 3.9  |
| Pot Cap-1 Maneuver         | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | *294                           | 0      | 0    | *359 |
| Stage 1                    | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | -                              | 0      | 0    | -    |
| Stage 2                    | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | -                              | 0      | 0    | -    |
| Platoon blocked, %         | -      | -                      | -    | -      | -                          | -     | -      | -    | 1                              | -      | -    | 1    |
| Mov Cap-1 Maneuver         | -      | -                      | -    | -      | -                          | -     | -      | -    | *294                           | -      | -    | *359 |
| Mov Cap-2 Maneuver         | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 1                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 2                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Approach                   | EB     |                        |      | WB     |                            |       | NB     |      |                                | SB     |      |      |
| HCM Control Delay, s       | 0      |                        |      | 0      |                            |       | 17.6   |      |                                | 0      |      |      |
| HCM LOS                    |        |                        |      |        |                            |       | C      |      |                                | A      |      |      |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Minor Lane/Major Mvmt      | NBLn1  | EBT                    | EBR  | WBT    | WBR                        | SBLn1 |        |      |                                |        |      |      |
| Capacity (veh/h)           | 294    | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| HCM Lane V/C Ratio         | 0.03   | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| HCM Control Delay (s)      | 17.6   | -                      | -    | -      | -                          | 0     |        |      |                                |        |      |      |
| HCM Lane LOS               | C      | -                      | -    | -      | -                          | A     |        |      |                                |        |      |      |
| HCM 95th %tile Q(veh)      | 0.1    | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| Notes                      |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |      |        | +: Computation Not Defined |       |        |      | *: All major volume in platoon |        |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/10/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 2    | 2683  | 25   | 2412  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2    | 2683  | 25   | 2412  | 2     | 0     | 37    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.6  | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 9.8  | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 8.2% | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.6  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lead | Lead  | Lag  | Lag   |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

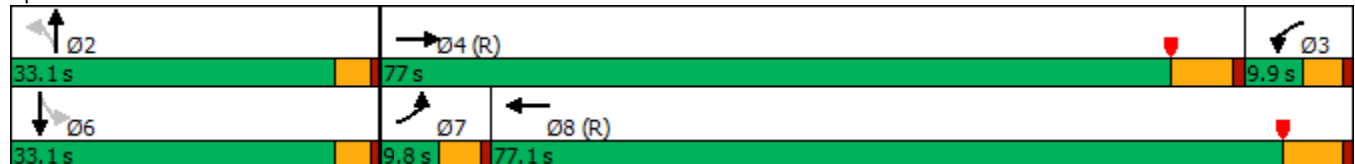
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/10/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 2                                                                                 | 2683                                                                              | 13                                                                                | 25                                                                                | 2412                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)        | 2                                                                                 | 2683                                                                              | 13                                                                                | 25                                                                                | 2412                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 2                                                                                 | 2916                                                                              | 14                                                                                | 27                                                                                | 2622                                                                              | 17                                                                                | 2                                                                                  | 0                                                                                   | 11                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 5                                                                                 | 3130                                                                              | 15                                                                                | 336                                                                               | 4182                                                                              | 27                                                                                | 42                                                                                 | 13                                                                                  | 114                                                                                 | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green              | 0.01                                                                              | 1.00                                                                              | 1.00                                                                              | 0.19                                                                              | 0.79                                                                              | 0.79                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5328                                                                              | 26                                                                                | 1810                                                                              | 5317                                                                              | 34                                                                                | 92                                                                                 | 158                                                                                 | 1373                                                                                | 1426                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 2                                                                                 | 1891                                                                              | 1039                                                                              | 27                                                                                | 1704                                                                              | 935                                                                               | 13                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1895                                                                              | 1810                                                                              | 1729                                                                              | 1894                                                                              | 1623                                                                               | 0                                                                                   | 0                                                                                   | 1426                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 1.5                                                                               | 24.9                                                                              | 25.0                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 1.5                                                                               | 24.9                                                                              | 25.0                                                                              | 0.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.9                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.15                                                                               |                                                                                     | 0.85                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 5                                                                                 | 2032                                                                              | 1114                                                                              | 336                                                                               | 2720                                                                              | 1489                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                 | 0.41                                                                              | 0.93                                                                              | 0.93                                                                              | 0.08                                                                              | 0.63                                                                              | 0.63                                                                              | 0.08                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 78                                                                                | 2032                                                                              | 1114                                                                              | 336                                                                               | 2720                                                                              | 1489                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.53                                                                              | 0.53                                                                              | 0.53                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.6                                                                              | 0.0                                                                               | 0.0                                                                               | 40.4                                                                              | 5.4                                                                               | 5.4                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh       | 19.3                                                                              | 9.2                                                                               | 15.0                                                                              | 0.0                                                                               | 0.6                                                                               | 1.1                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 2.6                                                                               | 4.6                                                                               | 0.6                                                                               | 5.5                                                                               | 6.2                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 78.9                                                                              | 9.2                                                                               | 15.0                                                                              | 40.4                                                                              | 6.0                                                                               | 6.5                                                                               | 51.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                    | E                                                                                 | A                                                                                 | B                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2932                                                                              |                                                                                   |                                                                                   | 2666                                                                              |                                                                                   |                                                                                   | 13                                                                                 |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 11.3                                                                              |                                                                                   |                                                                                   | 6.5                                                                               |                                                                                   |                                                                                   | 51.0                                                                               |                                                                                     |                                                                                     | 52.1                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | D                                                                                  |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   | 4                                                                                  |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.2                                                                              |                                                                                   |                                                                                   | 28.8                                                                              |                                                                                   |                                                                                   | 77.0                                                                               |                                                                                     |                                                                                     | 14.2                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             |                                                                                   |                                                                                   | 6.5                                                                               |                                                                                   |                                                                                   | * 6.5                                                                              |                                                                                     |                                                                                     | * 4.2                                                                               |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 29                                                                              |                                                                                   |                                                                                   | 5.3                                                                               |                                                                                   |                                                                                   | * 71                                                                               |                                                                                     |                                                                                     | * 29                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.9                                                                               |                                                                                   |                                                                                   | 3.5                                                                               |                                                                                   |                                                                                   | 2.0                                                                                |                                                                                     |                                                                                     | 4.9                                                                                 |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 46.9                                                                               |                                                                                     |                                                                                     | 0.1                                                                                 |                                                                                     |                                                                                     |

Intersection Summary

|                    |     |
|--------------------|-----|
| HCM 6th Ctrl Delay | 9.5 |
| HCM 6th LOS        | A   |

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## **APPENDIX 7.1:**

### **HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/29/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 4                                                                                 | 1809                                                                              | 47                                                                                | 3377                                                                              | 6                                                                                 | 76                                                                                | 0                                                                                   | 69                                                                                  | 7                                                                                   | 0                                                                                   | 4                                                                                   |
| Future Volume (vph)  | 4                                                                                 | 1809                                                                              | 47                                                                                | 3377                                                                              | 6                                                                                 | 76                                                                                | 0                                                                                   | 69                                                                                  | 7                                                                                   | 0                                                                                   | 4                                                                                   |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 23.5                                                                              | 9.2                                                                               | 23.5                                                                              | 23.5                                                                              | 31.6                                                                              | 31.6                                                                                | 31.6                                                                                | 14.6                                                                                | 14.6                                                                                | 14.6                                                                                |
| Total Split (s)      | 11.0                                                                              | 70.0                                                                              | 11.0                                                                              | 70.0                                                                              | 70.0                                                                              | 39.0                                                                              | 39.0                                                                                | 39.0                                                                                | 39.0                                                                                | 39.0                                                                                | 39.0                                                                                |
| Total Split (%)      | 9.2%                                                                              | 58.3%                                                                             | 9.2%                                                                              | 58.3%                                                                             | 58.3%                                                                             | 32.5%                                                                             | 32.5%                                                                               | 32.5%                                                                               | 32.5%                                                                               | 32.5%                                                                               | 32.5%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | None                                                                                | None                                                                                | None                                                                                | None                                                                                | None                                                                                |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.

|                                                                                     |                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø4                                                                                    |
| 11 s                                                                                | 70 s                                                                                | 39 s                                                                                  |
|  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              | Ø8                                                                                    |
| 11 s                                                                                | 70 s                                                                                | 39 s                                                                                  |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 2: Barton St. & Alessandro Bl. 05/29/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 4                                                                                 | 1809                                                                                                                                                                                                                                                  | 18                                                                                | 47                                                                                | 3377                                                                                                                                                                                                                                                  | 6                                                                                 | 76                                                                                 | 0                                                                                   | 69                                                                                  | 7                                                                                   | 0                                                                                   | 4                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1809                                                                                                                                                                                                                                                  | 18                                                                                | 47                                                                                | 3377                                                                                                                                                                                                                                                  | 6                                                                                 | 76                                                                                 | 0                                                                                   | 69                                                                                  | 7                                                                                   | 0                                                                                   | 4                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.99                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 1945                                                                                                                                                                                                                                                  | 19                                                                                | 51                                                                                | 3631                                                                                                                                                                                                                                                  | 6                                                                                 | 82                                                                                 | 0                                                                                   | 43                                                                                  | 8                                                                                   | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.93                                                                               | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 9                                                                                 | 3098                                                                                                                                                                                                                                                  | 30                                                                                | 66                                                                                | 3311                                                                                                                                                                                                                                                  | 935                                                                               | 61                                                                                 | 0                                                                                   | 455                                                                                 | 61                                                                                  | 0                                                                                   | 461                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.55                                                                                                                                                                                                                                                  | 0.55                                                                              | 0.05                                                                              | 0.77                                                                                                                                                                                                                                                  | 0.77                                                                              | 0.29                                                                               | 0.00                                                                                | 0.29                                                                                | 0.29                                                                                | 0.00                                                                                | 0.29                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5635                                                                                                                                                                                                                                                  | 55                                                                                | 1810                                                                              | 5700                                                                                                                                                                                                                                                  | 1610                                                                              | 5                                                                                  | 0                                                                                   | 1590                                                                                | 4                                                                                   | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 1311                                                                                                                                                                                                                                                  | 653                                                                               | 51                                                                                | 3631                                                                                                                                                                                                                                                  | 6                                                                                 | 82                                                                                 | 0                                                                                   | 43                                                                                  | 8                                                                                   | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                                                                                                                                                                                                  | 1890                                                                              | 1810                                                                              | 1900                                                                                                                                                                                                                                                  | 1610                                                                              | 5                                                                                  | 0                                                                                   | 1590                                                                                | 4                                                                                   | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.3                                                                               | 28.5                                                                                                                                                                                                                                                  | 28.5                                                                              | 3.3                                                                               | 69.7                                                                                                                                                                                                                                                  | 0.1                                                                               | 0.1                                                                                | 0.0                                                                                 | 2.4                                                                                 | 0.1                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.3                                                                               | 28.5                                                                                                                                                                                                                                                  | 28.5                                                                              | 3.3                                                                               | 69.7                                                                                                                                                                                                                                                  | 0.1                                                                               | 34.4                                                                               | 0.0                                                                                 | 2.4                                                                                 | 34.4                                                                                | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.03                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 9                                                                                 | 2089                                                                                                                                                                                                                                                  | 1039                                                                              | 66                                                                                | 3311                                                                                                                                                                                                                                                  | 935                                                                               | 61                                                                                 | 0                                                                                   | 455                                                                                 | 61                                                                                  | 0                                                                                   | 461                                                                                 |
| V/C Ratio(X)                 | 0.43                                                                              | 0.63                                                                                                                                                                                                                                                  | 0.63                                                                              | 0.77                                                                              | 1.10                                                                                                                                                                                                                                                  | 0.01                                                                              | 1.33                                                                               | 0.00                                                                                | 0.09                                                                                | 0.13                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 103                                                                               | 2089                                                                                                                                                                                                                                                  | 1039                                                                              | 103                                                                               | 3311                                                                                                                                                                                                                                                  | 935                                                                               | 62                                                                                 | 0                                                                                   | 456                                                                                 | 62                                                                                  | 0                                                                                   | 462                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.33                                                                              | 1.33                                                                                                                                                                                                                                                  | 1.33                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.57                                                                              | 0.57                                                                                                                                                                                                                                                  | 0.57                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.5                                                                              | 18.6                                                                                                                                                                                                                                                  | 18.6                                                                              | 56.6                                                                              | 13.6                                                                                                                                                                                                                                                  | 5.7                                                                               | 60.0                                                                               | 0.0                                                                                 | 31.4                                                                                | 60.0                                                                                | 0.0                                                                                 | 30.6                                                                                |
| Incr Delay (d2), s/veh       | 10.9                                                                              | 1.4                                                                                                                                                                                                                                                   | 2.9                                                                               | 4.1                                                                               | 46.7                                                                                                                                                                                                                                                  | 0.0                                                                               | 227.9                                                                              | 0.0                                                                                 | 0.1                                                                                 | 1.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 11.5                                                                                                                                                                                                                                                  | 11.8                                                                              | 1.5                                                                               | 25.2                                                                                                                                                                                                                                                  | 0.0                                                                               | 5.8                                                                                | 0.0                                                                                 | 0.9                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 70.4                                                                              | 20.0                                                                                                                                                                                                                                                  | 21.5                                                                              | 60.7                                                                              | 60.4                                                                                                                                                                                                                                                  | 5.7                                                                               | 287.9                                                                              | 0.0                                                                                 | 31.5                                                                                | 60.9                                                                                | 0.0                                                                                 | 30.6                                                                                |
| LnGrp LOS                    | E                                                                                 | C                                                                                                                                                                                                                                                     | C                                                                                 | E                                                                                 | F                                                                                                                                                                                                                                                     | A                                                                                 | F                                                                                  | A                                                                                   | C                                                                                   | E                                                                                   | A                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 1968                                                                              |                                                                                                                                                                                                                                                       | 3688                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 125                                                                                |                                                                                     | 9                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 20.6                                                                              |                                                                                                                                                                                                                                                       | 60.3                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 199.7                                                                              |                                                                                     | 57.6                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | C                                                                                 |                                                                                                                                                                                                                                                       | E                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | F                                                                                  |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 4                                                                                 |                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 8                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 8.6                                                                               | 72.4                                                                                                                                                                                                                                                  | 39.0                                                                              |                                                                                   | 4.8                                                                                                                                                                                                                                                   | 76.2                                                                              | 39.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             | 6.5                                                                                                                                                                                                                                                   | 4.6                                                                               |                                                                                   | * 4.2                                                                                                                                                                                                                                                 | 6.5                                                                               | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 6.8                                                                             | 63.5                                                                                                                                                                                                                                                  | 34.4                                                                              |                                                                                   | * 6.8                                                                                                                                                                                                                                                 | 63.5                                                                              | 34.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.3                                                                               | 30.5                                                                                                                                                                                                                                                  | 36.4                                                                              |                                                                                   | 2.3                                                                                                                                                                                                                                                   | 71.7                                                                              | 36.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 22.4                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 49.8                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | D                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/29/2019

|                      |  |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | Ø6   |
| Lane Configurations  |  |  |  |  |                                                                                   |  |      |
| Traffic Volume (vph) | 6                                                                                 | 1873                                                                              | 2                                                                                 | 3430                                                                              | 4                                                                                 | 0                                                                                 |      |
| Future Volume (vph)  | 6                                                                                 | 1873                                                                              | 2                                                                                 | 3430                                                                              | 4                                                                                 | 0                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                |      |
| Protected Phases     | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |                                                                                   | 2                                                                                 | 6    |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |      |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.2                                                                               | 23.5                                                                              | 9.2                                                                               | 23.5                                                                              | 14.6                                                                              | 14.6                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 95.0                                                                              | 10.0                                                                              | 95.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0 |
| Total Split (%)      | 8.3%                                                                              | 79.2%                                                                             | 8.3%                                                                              | 79.2%                                                                             | 12.5%                                                                             | 12.5%                                                                             | 13%  |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                               |      |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                   |      |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None |

Intersection Summary

Cycle Length: 120

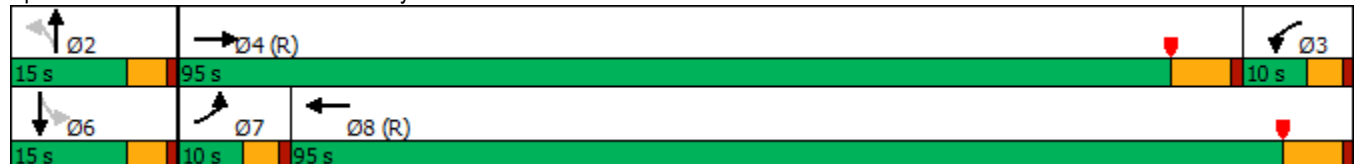
Actuated Cycle Length: 120

Offset: 81 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/29/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                     |  |                                                                                     |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 6                                                                                 | 1873                                                                              | 6                                                                                 | 2                                                                                 | 3430                                                                              | 0                                                                                 | 4                                                                                   | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 6                                                                                 | 1873                                                                              | 6                                                                                 | 2                                                                                 | 3430                                                                              | 0                                                                                 | 4                                                                                   | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 7                                                                                 | 2036                                                                              | 7                                                                                 | 2                                                                                 | 3728                                                                              | 0                                                                                 | 4                                                                                   | 0                                                                                   | 1                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 16                                                                                | 3936                                                                              | 14                                                                                | 186                                                                               | 4414                                                                              | 0                                                                                 | 69                                                                                  | 0                                                                                   | 4                                                                                   | 0                                                                                   | 24                                                                                  | 0                                                                                   |
| Arrive On Green              | 0.02                                                                              | 1.00                                                                              | 1.00                                                                              | 0.10                                                                              | 0.85                                                                              | 0.00                                                                              | 0.01                                                                                | 0.00                                                                                | 0.01                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5336                                                                              | 18                                                                                | 1810                                                                              | 5358                                                                              | 0                                                                                 | 1177                                                                                | 0                                                                                   | 294                                                                                 | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Grp Volume(v), veh/h         | 7                                                                                 | 1319                                                                              | 724                                                                               | 2                                                                                 | 3728                                                                              | 0                                                                                 | 5                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1897                                                                              | 1810                                                                              | 1729                                                                              | 0                                                                                 | 1471                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 45.7                                                                              | 0.0                                                                               | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 45.7                                                                              | 0.0                                                                               | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              | 0.80                                                                                |                                                                                     | 0.20                                                                                | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 16                                                                                | 2550                                                                              | 1399                                                                              | 186                                                                               | 4414                                                                              | 0                                                                                 | 73                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 24                                                                                  | 0                                                                                   |
| V/C Ratio(X)                 | 0.45                                                                              | 0.52                                                                              | 0.52                                                                              | 0.01                                                                              | 0.84                                                                              | 0.00                                                                              | 0.07                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 87                                                                                | 2550                                                                              | 1399                                                                              | 186                                                                               | 4414                                                                              | 0                                                                                 | 181                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 165                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 0.87                                                                              | 0.87                                                                              | 0.87                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.7                                                                              | 0.0                                                                               | 0.0                                                                               | 48.3                                                                              | 4.7                                                                               | 0.0                                                                               | 58.7                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 6.3                                                                               | 0.7                                                                               | 1.2                                                                               | 0.0                                                                               | 2.1                                                                               | 0.0                                                                               | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 0.2                                                                               | 0.5                                                                               | 0.1                                                                               | 5.2                                                                               | 0.0                                                                               | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 65.0                                                                              | 0.7                                                                               | 1.2                                                                               | 48.3                                                                              | 6.9                                                                               | 0.0                                                                               | 59.1                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 2050                                                                              |                                                                                   |                                                                                   | 3730                                                                              |                                                                                   |                                                                                   | 5                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 1.1                                                                               |                                                                                   |                                                                                   | 6.9                                                                               |                                                                                   |                                                                                   | 59.1                                                                                |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 6.1                                                                               |                                                                                   | 18.9                                                                              | 95.0                                                                              |                                                                                   | 6.1                                                                               | 5.2                                                                                 | 108.6                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 6.5                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               | * 4.2                                                                               | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                   | 5.8                                                                               | * 89                                                                              |                                                                                   | 10.4                                                                              | * 5.8                                                                               | 88.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.4                                                                               |                                                                                   | 2.1                                                                               | 2.0                                                                               |                                                                                   | 0.0                                                                               | 2.5                                                                                 | 47.7                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 40.7                                                                              |                                                                                   | 0.0                                                                               | 0.0                                                                                 | 40.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 4.9                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Intersection

Int Delay, s/veh 0.6

| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↑↑↑  |      | ↑    | ↑↑↑  | ↑    | ↑    |
| Traffic Vol, veh/h       | 1877 | 8    | 14   | 3432 | 4    | 17   |
| Future Vol, veh/h        | 1877 | 8    | 14   | 3432 | 4    | 17   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 155  | -    | 0    | 0    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 2040 | 9    | 15   | 3730 | 4    | 18   |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 2049   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 5.3    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 3.1    |
| Pot Cap-1 Maneuver   | -      | -      | 121    |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 121    |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB  | NB  |
|----------------------|----|-----|-----|
| HCM Control Delay, s | 0  | 0.2 | 110 |
| HCM LOS              |    |     | F   |

| Minor Lane/Major Mvmt | NBLn1    | NBLn2 | EBT | EBR | WBL   | WBT |
|-----------------------|----------|-------|-----|-----|-------|-----|
| Capacity (veh/h)      | 11       | 202   | -   | -   | 121   | -   |
| HCM Lane V/C Ratio    | 0.395    | 0.091 | -   | -   | 0.126 | -   |
| HCM Control Delay (s) | \$ 473.2 | 24.6  | -   | -   | 39    | -   |
| HCM Lane LOS          | F        | C     | -   | -   | E     | -   |
| HCM 95th %tile Q(veh) | 0.9      | 0.3   | -   | -   | 0.4   | -   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/29/2019



| Lane Group           | EBL  | EBT   | WBL   | WBT   | WBR   | NBL  | NBR   | SBL  | SBR   |
|----------------------|------|-------|-------|-------|-------|------|-------|------|-------|
| Lane Configurations  |      |       |       |       |       |      |       |      |       |
| Traffic Volume (vph) | 13   | 1869  | 175   | 3760  | 46    | 13   | 68    | 25   | 16    |
| Future Volume (vph)  | 13   | 1869  | 175   | 3760  | 46    | 13   | 68    | 25   | 16    |
| Turn Type            | Prot | NA    | Prot  | NA    | Perm  | Prot | Perm  | Prot | Perm  |
| Protected Phases     | 5    | 2     | 1     | 6     |       | 3    |       | 7    |       |
| Permitted Phases     |      |       |       |       | 6     |      | 8     |      | 4     |
| Detector Phase       | 5    | 2     | 1     | 6     | 6     | 3    | 8     | 7    | 4     |
| Switch Phase         |      |       |       |       |       |      |       |      |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0   | 10.0  | 10.0  | 5.0  | 10.0  | 5.0  | 10.0  |
| Minimum Split (s)    | 9.6  | 16.5  | 9.6   | 30.5  | 30.5  | 9.6  | 26.6  | 9.6  | 14.6  |
| Total Split (s)      | 9.6  | 69.6  | 14.0  | 74.0  | 74.0  | 9.6  | 26.8  | 9.6  | 26.8  |
| Total Split (%)      | 8.0% | 58.0% | 11.7% | 61.7% | 61.7% | 8.0% | 22.3% | 8.0% | 22.3% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6   | 5.5   | 5.5   | 3.6  | 3.6   | 3.6  | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0  | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   |
| Total Lost Time (s)  | 4.6  | 6.5   | 4.6   | 6.5   | 6.5   | 4.6  | 4.6   | 4.6  | 4.6   |
| Lead/Lag             | Lead | Lag   | Lead  | Lag   | Lag   | Lead | Lag   | Lead | Lag   |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes   | Yes   | Yes   | Yes  | Yes   | Yes  | Yes   |
| Recall Mode          | None | C-Max | None  | None  | None  | None | None  | None | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 77.1 (64%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.

|       |        |       |        |
|-------|--------|-------|--------|
|       |        |       |        |
| Ø1    | Ø2 (R) | Ø3    | Ø4     |
| 14 s  | 69.6 s | 9.6 s | 26.8 s |
|       |        |       |        |
| Ø5    | Ø6     | Ø7    | Ø8     |
| 9.6 s | 74 s   | 9.6 s | 26.8 s |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/29/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |  |  |  |  |  |   |  |
| Traffic Volume (veh/h)       | 13                                                                                | 1869                                                                                                                                                                                                                                                  | 35                                                                                | 175                                                                               | 3760                                                                                                                                                                                                                                                  | 46                                                                                | 13                                                                                  | 0                                                                                   | 68                                                                                  | 25                                                                                  | 0                                                                                                                                                                       | 16                                                                                  |
| Future Volume (veh/h)        | 13                                                                                | 1869                                                                                                                                                                                                                                                  | 35                                                                                | 175                                                                               | 3760                                                                                                                                                                                                                                                  | 46                                                                                | 13                                                                                  | 0                                                                                   | 68                                                                                  | 25                                                                                  | 0                                                                                                                                                                       | 16                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 14                                                                                | 2032                                                                                                                                                                                                                                                  | 38                                                                                | 190                                                                               | 4087                                                                                                                                                                                                                                                  | 47                                                                                | 14                                                                                  | 0                                                                                   | 74                                                                                  | 27                                                                                  | 0                                                                                                                                                                       | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 28                                                                                | 3359                                                                                                                                                                                                                                                  | 63                                                                                | 142                                                                               | 3650                                                                                                                                                                                                                                                  | 1132                                                                              | 28                                                                                  | 153                                                                                 | 130                                                                                 | 56                                                                                  | 183                                                                                                                                                                     |                                                                                     |
| Arrive On Green              | 0.02                                                                              | 0.64                                                                                                                                                                                                                                                  | 0.64                                                                              | 0.10                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.02                                                                                | 0.00                                                                                | 0.08                                                                                | 0.03                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5242                                                                                                                                                                                                                                                  | 98                                                                                | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1609                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                                                                                                    | 1610                                                                                |
| Grp Volume(v), veh/h         | 14                                                                                | 1340                                                                                                                                                                                                                                                  | 730                                                                               | 190                                                                               | 4087                                                                                                                                                                                                                                                  | 47                                                                                | 14                                                                                  | 0                                                                                   | 74                                                                                  | 27                                                                                  | 0                                                                                                                                                                       | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1882                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1609                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                                                                                                    | 1610                                                                                |
| Q Serve(g_s), s              | 0.9                                                                               | 27.3                                                                                                                                                                                                                                                  | 27.3                                                                              | 9.4                                                                               | 84.4                                                                                                                                                                                                                                                  | 0.2                                                                               | 0.9                                                                                 | 0.0                                                                                 | 5.3                                                                                 | 1.8                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.9                                                                               | 27.3                                                                                                                                                                                                                                                  | 27.3                                                                              | 9.4                                                                               | 84.4                                                                                                                                                                                                                                                  | 0.2                                                                               | 0.9                                                                                 | 0.0                                                                                 | 5.3                                                                                 | 1.8                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.05                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 28                                                                                | 2216                                                                                                                                                                                                                                                  | 1206                                                                              | 142                                                                               | 3650                                                                                                                                                                                                                                                  | 1132                                                                              | 28                                                                                  | 153                                                                                 | 130                                                                                 | 56                                                                                  | 183                                                                                                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.50                                                                              | 0.60                                                                                                                                                                                                                                                  | 0.61                                                                              | 1.34                                                                              | 1.12                                                                                                                                                                                                                                                  | 0.04                                                                              | 0.50                                                                                | 0.00                                                                                | 0.57                                                                                | 0.48                                                                                | 0.00                                                                                                                                                                    |                                                                                     |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2216                                                                                                                                                                                                                                                  | 1206                                                                              | 142                                                                               | 3650                                                                                                                                                                                                                                                  | 1132                                                                              | 75                                                                                  | 352                                                                                 | 298                                                                                 | 75                                                                                  | 352                                                                                                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.33                                                                              | 1.33                                                                                                                                                                                                                                                  | 1.33                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                  | 0.09                                                                              | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.6                                                                              | 12.6                                                                                                                                                                                                                                                  | 12.7                                                                              | 53.7                                                                              | 3.9                                                                                                                                                                                                                                                   | 1.1                                                                               | 58.6                                                                                | 0.0                                                                                 | 53.2                                                                                | 57.2                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 5.0                                                                               | 1.2                                                                                                                                                                                                                                                   | 2.3                                                                               | 157.6                                                                             | 54.4                                                                                                                                                                                                                                                  | 0.0                                                                               | 13.0                                                                                | 0.0                                                                                 | 3.9                                                                                 | 6.2                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.4                                                                               | 9.1                                                                                                                                                                                                                                                   | 10.3                                                                              | 10.2                                                                              | 20.2                                                                                                                                                                                                                                                  | 0.1                                                                               | 0.5                                                                                 | 0.0                                                                                 | 0.1                                                                                 | 0.9                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 63.6                                                                              | 13.9                                                                                                                                                                                                                                                  | 14.9                                                                              | 211.3                                                                             | 58.2                                                                                                                                                                                                                                                  | 1.2                                                                               | 71.6                                                                                | 0.0                                                                                 | 57.0                                                                                | 63.4                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | B                                                                                                                                                                                                                                                     | B                                                                                 | F                                                                                 | F                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                   | A                                                                                   | E                                                                                   | E                                                                                   | A                                                                                                                                                                       |                                                                                     |
| Approach Vol, veh/h          | 2084                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       | 4324                                                                              |                                                                                     |                                                                                     | 88                                                                                  |                                                                                     | 27                                                                                                                                                                      |                                                                                     |
| Approach Delay, s/veh        | 14.6                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       | 64.3                                                                              |                                                                                     |                                                                                     | 59.4                                                                                |                                                                                     | 63.4                                                                                                                                                                    |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       | E                                                                                 |                                                                                     |                                                                                     | E                                                                                   |                                                                                     | E                                                                                                                                                                       |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                 | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.0                                                                              | 83.4                                                                                                                                                                                                                                                  | 6.5                                                                               | 16.1                                                                              | 6.5                                                                                                                                                                                                                                                   | 90.9                                                                              | 8.3                                                                                 | 14.3                                                                                |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               | 6.5                                                                                                                                                                                                                                                   | 4.6                                                                               | 4.6                                                                               | 4.6                                                                                                                                                                                                                                                   | 6.5                                                                               | 4.6                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 9.4                                                                               | 63.1                                                                                                                                                                                                                                                  | 5.0                                                                               | 22.2                                                                              | 5.0                                                                                                                                                                                                                                                   | 67.5                                                                              | 5.0                                                                                 | 22.2                                                                                |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 11.4                                                                              | 29.3                                                                                                                                                                                                                                                  | 2.9                                                                               | 0.0                                                                               | 2.9                                                                                                                                                                                                                                                   | 86.4                                                                              | 3.8                                                                                 | 7.3                                                                                 |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 24.2                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.1                                                                                 |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           | 48.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  | D                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/29/2019

|                      |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |  |                                                                                       |                                                                                      |                                                                                      |                                                                                      |                                                                                      |  |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                     | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations  |  |    |  |   |    |  |   |   |   |   |   |  |
| Traffic Volume (vph) | 256                                                                               | 1709                                                                                                                                                                                                                                                  | 367                                                                               | 315                                                                                                                                                                 | 2984                                                                                                                                                                                                                                                  | 607                                                                               | 672                                                                                                                                                                     | 859                                                                                                                                                                     | 111                                                                                                                                                                     | 174                                                                                                                                                                     | 175                                                                                                                                                                     | 258                                                                                 |
| Future Volume (vph)  | 256                                                                               | 1709                                                                                                                                                                                                                                                  | 367                                                                               | 315                                                                                                                                                                 | 2984                                                                                                                                                                                                                                                  | 607                                                                               | 672                                                                                                                                                                     | 859                                                                                                                                                                     | 111                                                                                                                                                                     | 174                                                                                                                                                                     | 175                                                                                                                                                                     | 258                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                                                                                                                | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | pm+ov                                                                                                                                                                   | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     |                                                                                   | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       | 2                                                                                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                                                                                                         |                                                                                                                                                                         | 8                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 2                                                                                 | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     | 6                                                                                 | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                              | 5.0                                                                                                                                                                 | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                              | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 5.0                                                                                                                                                                     | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                              | 8.7                                                                                                                                                                 | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                              | 8.7                                                                                                                                                                     | 15.8                                                                                                                                                                    | 8.7                                                                                                                                                                     | 8.7                                                                                                                                                                     | 49.8                                                                                                                                                                    | 49.8                                                                                |
| Total Split (s)      | 10.0                                                                              | 46.4                                                                                                                                                                                                                                                  | 46.4                                                                              | 10.0                                                                                                                                                                | 46.4                                                                                                                                                                                                                                                  | 46.4                                                                              | 13.0                                                                                                                                                                    | 50.6                                                                                                                                                                    | 10.0                                                                                                                                                                    | 13.0                                                                                                                                                                    | 50.6                                                                                                                                                                    | 50.6                                                                                |
| Total Split (%)      | 8.3%                                                                              | 38.7%                                                                                                                                                                                                                                                 | 38.7%                                                                             | 8.3%                                                                                                                                                                | 38.7%                                                                                                                                                                                                                                                 | 38.7%                                                                             | 10.8%                                                                                                                                                                   | 42.2%                                                                                                                                                                   | 8.3%                                                                                                                                                                    | 10.8%                                                                                                                                                                   | 42.2%                                                                                                                                                                   | 42.2%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 3.2                                                                                                                                                                 | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 3.2                                                                                                                                                                     | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 0.5                                                                                                                                                                 | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 0.5                                                                                                                                                                     | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                 | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 3.7                                                                                                                                                                     | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                                                                                                                                                                                                   | Lag                                                                               | Lead                                                                                                                                                                | Lag                                                                                                                                                                                                                                                   | Lag                                                                               | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lead                                                                                                                                                                    | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                                                                                                                                                                                                   | Yes                                                                               | Yes                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                   | Yes                                                                               | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | None                                                                                                                                                                | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. &amp; Alessandro Bl.

|                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |        |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------|
|  |  |  |  |  |  |  |  |  |        |
| Ø1                                                                                  | Ø2 (R)                                                                              |                                                                                     | Ø3                                                                                  | Ø4                                                                                  |                                                                                     | Ø5                                                                                  | Ø6 (R)                                                                              | Ø7                                                                                  | Ø8     |
| 10 s                                                                                | 46.4 s                                                                              |                                                                                     | 13 s                                                                                | 50.6 s                                                                              |                                                                                     | 10 s                                                                                | 46.4 s                                                                              | 13 s                                                                                | 50.6 s |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/29/2019

|                              |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |  |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                     | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |  |   |    |  |   |   |   |   |   |  |
| Traffic Volume (veh/h)       | 256                                                                               | 1709                                                                                                                                                                                                                                                  | 367                                                                               | 315                                                                                                                                                                 | 2984                                                                                                                                                                                                                                                  | 607                                                                               | 672                                                                                                                                                                     | 859                                                                                                                                                                     | 111                                                                                                                                                                     | 174                                                                                                                                                                     | 175                                                                                                                                                                     | 258                                                                                 |
| Future Volume (veh/h)        | 256                                                                               | 1709                                                                                                                                                                                                                                                  | 367                                                                               | 315                                                                                                                                                                 | 2984                                                                                                                                                                                                                                                  | 607                                                                               | 672                                                                                                                                                                     | 859                                                                                                                                                                     | 111                                                                                                                                                                     | 174                                                                                                                                                                     | 175                                                                                                                                                                     | 258                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                     | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                         | No                                                                                                                                                                      |                                                                                                                                                                         |                                                                                                                                                                         | No                                                                                                                                                                      |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 269                                                                               | 1799                                                                                                                                                                                                                                                  | 386                                                                               | 332                                                                                                                                                                 | 3141                                                                                                                                                                                                                                                  | 639                                                                               | 707                                                                                                                                                                     | 904                                                                                                                                                                     | 117                                                                                                                                                                     | 183                                                                                                                                                                     | 184                                                                                                                                                                     | 272                                                                                 |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                                                                                                                | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                    | 0.95                                                                                                                                                                    | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 95                                                                                | 2171                                                                                                                                                                                                                                                  | 674                                                                               | 184                                                                                                                                                                 | 2171                                                                                                                                                                                                                                                  | 673                                                                               | 272                                                                                                                                                                     | 1071                                                                                                                                                                    | 990                                                                                                                                                                     | 239                                                                                                                                                                     | 1037                                                                                                                                                                    | 463                                                                                 |
| Arrive On Green              | 0.02                                                                              | 0.14                                                                                                                                                                                                                                                  | 0.14                                                                              | 0.05                                                                                                                                                                | 0.42                                                                                                                                                                                                                                                  | 0.42                                                                              | 0.08                                                                                                                                                                    | 0.30                                                                                                                                                                    | 0.30                                                                                                                                                                    | 0.07                                                                                                                                                                    | 0.29                                                                                                                                                                    | 0.29                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                | 5187                                                                                                                                                                                                                                                  | 1609                                                                              | 3510                                                                                                                                                                    | 3610                                                                                                                                                                    | 2834                                                                                                                                                                    | 3510                                                                                                                                                                    | 3610                                                                                                                                                                    | 1610                                                                                |
| Grp Volume(v), veh/h         | 269                                                                               | 1799                                                                                                                                                                                                                                                  | 386                                                                               | 332                                                                                                                                                                 | 3141                                                                                                                                                                                                                                                  | 639                                                                               | 707                                                                                                                                                                     | 904                                                                                                                                                                     | 117                                                                                                                                                                     | 183                                                                                                                                                                     | 184                                                                                                                                                                     | 272                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                | 1729                                                                                                                                                                                                                                                  | 1609                                                                              | 1755                                                                                                                                                                    | 1805                                                                                                                                                                    | 1417                                                                                                                                                                    | 1755                                                                                                                                                                    | 1805                                                                                                                                                                    | 1610                                                                                |
| Q Serve(g_s), s              | 6.3                                                                               | 40.5                                                                                                                                                                                                                                                  | 26.9                                                                              | 6.3                                                                                                                                                                 | 50.2                                                                                                                                                                                                                                                  | 46.0                                                                              | 9.3                                                                                                                                                                     | 28.2                                                                                                                                                                    | 3.4                                                                                                                                                                     | 6.2                                                                                                                                                                     | 4.6                                                                                                                                                                     | 17.4                                                                                |
| Cycle Q Clear(g_c), s        | 6.3                                                                               | 40.5                                                                                                                                                                                                                                                  | 26.9                                                                              | 6.3                                                                                                                                                                 | 50.2                                                                                                                                                                                                                                                  | 46.0                                                                              | 9.3                                                                                                                                                                     | 28.2                                                                                                                                                                    | 3.4                                                                                                                                                                     | 6.2                                                                                                                                                                     | 4.6                                                                                                                                                                     | 17.4                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 95                                                                                | 2171                                                                                                                                                                                                                                                  | 674                                                                               | 184                                                                                                                                                                 | 2171                                                                                                                                                                                                                                                  | 673                                                                               | 272                                                                                                                                                                     | 1071                                                                                                                                                                    | 990                                                                                                                                                                     | 239                                                                                                                                                                     | 1037                                                                                                                                                                    | 463                                                                                 |
| V/C Ratio(X)                 | 2.83                                                                              | 0.83                                                                                                                                                                                                                                                  | 0.57                                                                              | 1.80                                                                                                                                                                | 1.45                                                                                                                                                                                                                                                  | 0.95                                                                              | 2.60                                                                                                                                                                    | 0.84                                                                                                                                                                    | 0.12                                                                                                                                                                    | 0.77                                                                                                                                                                    | 0.18                                                                                                                                                                    | 0.59                                                                                |
| Avail Cap(c_a), veh/h        | 95                                                                                | 2171                                                                                                                                                                                                                                                  | 674                                                                               | 184                                                                                                                                                                 | 2171                                                                                                                                                                                                                                                  | 673                                                                               | 272                                                                                                                                                                     | 1348                                                                                                                                                                    | 1207                                                                                                                                                                    | 272                                                                                                                                                                     | 1348                                                                                                                                                                    | 601                                                                                 |
| HCM Platoon Ratio            | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(I)           | 0.66                                                                              | 0.66                                                                                                                                                                                                                                                  | 0.66                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.0                                                                              | 47.5                                                                                                                                                                                                                                                  | 41.7                                                                              | 56.8                                                                                                                                                                | 34.9                                                                                                                                                                                                                                                  | 33.7                                                                              | 55.3                                                                                                                                                                    | 39.6                                                                                                                                                                    | 26.5                                                                                                                                                                    | 55.0                                                                                                                                                                    | 32.1                                                                                                                                                                    | 36.7                                                                                |
| Incr Delay (d2), s/veh       | 843.1                                                                             | 2.6                                                                                                                                                                                                                                                   | 2.3                                                                               | 381.4                                                                                                                                                               | 203.8                                                                                                                                                                                                                                                 | 24.2                                                                              | 730.0                                                                                                                                                                   | 4.1                                                                                                                                                                     | 0.1                                                                                                                                                                     | 9.0                                                                                                                                                                     | 0.1                                                                                                                                                                     | 1.2                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 25.2                                                                              | 19.2                                                                                                                                                                                                                                                  | 12.0                                                                              | 12.5                                                                                                                                                                | 60.6                                                                                                                                                                                                                                                  | 21.3                                                                              | 31.6                                                                                                                                                                    | 12.6                                                                                                                                                                    | 1.1                                                                                                                                                                     | 3.0                                                                                                                                                                     | 2.0                                                                                                                                                                     | 6.8                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 902.1                                                                             | 50.1                                                                                                                                                                                                                                                  | 44.0                                                                              | 438.2                                                                                                                                                               | 238.7                                                                                                                                                                                                                                                 | 57.9                                                                              | 785.4                                                                                                                                                                   | 43.7                                                                                                                                                                    | 26.6                                                                                                                                                                    | 64.0                                                                                                                                                                    | 32.2                                                                                                                                                                    | 37.9                                                                                |
| LnGrp LOS                    | F                                                                                 | D                                                                                                                                                                                                                                                     | D                                                                                 | F                                                                                                                                                                   | F                                                                                                                                                                                                                                                     | E                                                                                 | F                                                                                                                                                                       | D                                                                                                                                                                       | C                                                                                                                                                                       | E                                                                                                                                                                       | C                                                                                                                                                                       | D                                                                                   |
| Approach Vol, veh/h          | 2454                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     | 4112                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 1728                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        | 142.5                                                                             |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     | 226.7                                                                                                                                                                                                                                                 |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 346.0                                                                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Approach LOS                 | F                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     | F                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | F                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 7                                                                                                                                                                       | 8                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.0                                                                              | 56.7                                                                                                                                                                                                                                                  | 13.0                                                                              | 40.3                                                                                                                                                                | 10.0                                                                                                                                                                                                                                                  | 56.7                                                                              | 11.9                                                                                                                                                                    | 41.4                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 3.7                                                                               | 5.8                                                                                                                                                                 | 3.7                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 6.3                                                                               | 39.9                                                                                                                                                                                                                                                  | 9.3                                                                               | 44.8                                                                                                                                                                | 6.3                                                                                                                                                                                                                                                   | 39.9                                                                              | 9.3                                                                                                                                                                     | 44.8                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 8.3                                                                               | 42.5                                                                                                                                                                                                                                                  | 11.3                                                                              | 19.4                                                                                                                                                                | 8.3                                                                                                                                                                                                                                                   | 52.2                                                                              | 8.2                                                                                                                                                                     | 30.2                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 1.9                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 5.4                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           | 213.6                                                                             |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  | F                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/28/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↱     | ↱     |
| Traffic Volume (vph) | 1513  | 3319  | 350   | 0     | 587   |
| Future Volume (vph)  | 1513  | 3319  | 350   | 0     | 587   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 63.0  | 63.0  | 22.0  | 22.0  | 22.0  |
| Total Split (%)      | 74.1% | 74.1% | 25.9% | 25.9% | 25.9% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

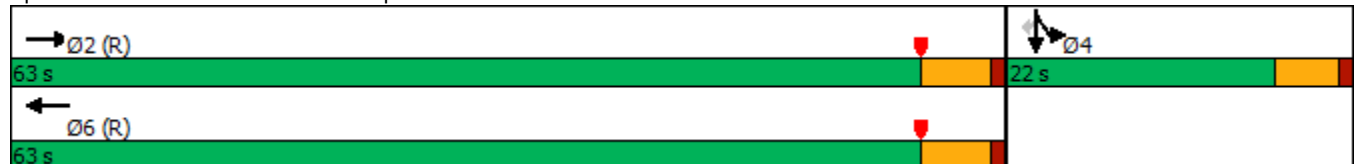
Actuated Cycle Length: 85

Offset: 9 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/28/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                   | ↑↑↑                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     | ↱                                                                                   | ↕                                                                                   | ↗                                                                                   |
| Traffic Volume (veh/h)       | 0                                                                                 | 1513                                                                              | 481                                                                               | 0                                                                                 | 3319                                                                              | 270                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 350                                                                                 | 0                                                                                   | 587                                                                                 |
| Future Volume (veh/h)        | 0                                                                                 | 1513                                                                              | 481                                                                               | 0                                                                                 | 3319                                                                              | 270                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 350                                                                                 | 0                                                                                   | 587                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              |                                                                                    |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 0                                                                                 | 1560                                                                              | 467                                                                               | 0                                                                                 | 3422                                                                              | 278                                                                               |                                                                                    |                                                                                     |                                                                                     | 241                                                                                 | 0                                                                                   | 690                                                                                 |
| Peak Hour Factor             | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 0                                                                                 | 2675                                                                              | 787                                                                               | 0                                                                                 | 3310                                                                              | 261                                                                               |                                                                                    |                                                                                     |                                                                                     | 362                                                                                 | 0                                                                                   | 643                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.68                                                                              | 0.68                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.20                                                                                | 0.00                                                                                | 0.20                                                                                |
| Sat Flow, veh/h              | 0                                                                                 | 4125                                                                              | 1164                                                                              | 0                                                                                 | 5064                                                                              | 386                                                                               |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 3216                                                                                |
| Grp Volume(v), veh/h         | 0                                                                                 | 1361                                                                              | 666                                                                               | 0                                                                                 | 2388                                                                              | 1312                                                                              |                                                                                    |                                                                                     |                                                                                     | 241                                                                                 | 0                                                                                   | 690                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 0                                                                                 | 1729                                                                              | 1660                                                                              | 0                                                                                 | 1729                                                                              | 1820                                                                              |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 1608                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 17.8                                                                              | 18.4                                                                              | 0.0                                                                               | 0.0                                                                               | 56.4                                                                              |                                                                                    |                                                                                     |                                                                                     | 10.4                                                                                | 0.0                                                                                 | 17.0                                                                                |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 17.8                                                                              | 18.4                                                                              | 0.0                                                                               | 0.0                                                                               | 56.4                                                                              |                                                                                    |                                                                                     |                                                                                     | 10.4                                                                                | 0.0                                                                                 | 17.0                                                                                |
| Prop In Lane                 | 0.00                                                                              |                                                                                   | 0.70                                                                              | 0.00                                                                              |                                                                                   | 0.21                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 0                                                                                 | 2339                                                                              | 1123                                                                              | 0                                                                                 | 2339                                                                              | 1231                                                                              |                                                                                    |                                                                                     |                                                                                     | 362                                                                                 | 0                                                                                   | 643                                                                                 |
| V/C Ratio(X)                 | 0.00                                                                              | 0.58                                                                              | 0.59                                                                              | 0.00                                                                              | 1.02                                                                              | 1.07                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.67                                                                                | 0.00                                                                                | 1.07                                                                                |
| Avail Cap(c_a), veh/h        | 0                                                                                 | 2339                                                                              | 1123                                                                              | 0                                                                                 | 2339                                                                              | 1231                                                                              |                                                                                    |                                                                                     |                                                                                     | 362                                                                                 | 0                                                                                   | 643                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                              | 2.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.09                                                                              | 0.09                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 7.3                                                                               | 7.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 31.4                                                                                | 0.0                                                                                 | 34.0                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 1.1                                                                               | 2.3                                                                               | 0.0                                                                               | 12.0                                                                              | 31.5                                                                              |                                                                                    |                                                                                     |                                                                                     | 4.6                                                                                 | 0.0                                                                                 | 56.7                                                                                |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 4.4                                                                               | 4.8                                                                               | 0.0                                                                               | 3.9                                                                               | 10.8                                                                              |                                                                                    |                                                                                     |                                                                                     | 4.7                                                                                 | 0.0                                                                                 | 11.2                                                                                |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 8.4                                                                               | 9.7                                                                               | 0.0                                                                               | 12.0                                                                              | 31.5                                                                              |                                                                                    |                                                                                     |                                                                                     | 36.0                                                                                | 0.0                                                                                 | 90.7                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | F                                                                                 | F                                                                                 |                                                                                    |                                                                                     |                                                                                     | D                                                                                   | A                                                                                   | F                                                                                   |
| Approach Vol, veh/h          | 2027                                                                              |                                                                                   |                                                                                   | 3700                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | 931                                                                                 |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 8.8                                                                               |                                                                                   |                                                                                   | 18.9                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | 76.5                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 63.0                                                                              |                                                                                   |                                                                                   | 22.0                                                                              |                                                                                   |                                                                                   | 63.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   | 5.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 57.5                                                                              |                                                                                   |                                                                                   | 17.0                                                                              |                                                                                   |                                                                                   | 57.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 20.4                                                                              |                                                                                   |                                                                                   | 19.0                                                                              |                                                                                   |                                                                                   | 58.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 18.9                                                                              |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   |                                                                                   | 23.9                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/28/2019

|                      |  |                                                                                                                                                                      |                                                                                                                                                                      |  |  |                                                                                    |   |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                               | NBT                                                                                                                                                                 | NBR                                                                                 |
| Lane Configurations  |  |    |    |  |  |   |  |
| Traffic Volume (vph) | 91                                                                                | 1736                                                                                                                                                                                                                                                  | 2487                                                                                                                                                                                                                                                  | 211                                                                               | 1165                                                                              | 35                                                                                                                                                                  | 274                                                                                 |
| Future Volume (vph)  | 91                                                                                | 1736                                                                                                                                                                                                                                                  | 2487                                                                                                                                                                                                                                                  | 211                                                                               | 1165                                                                              | 35                                                                                                                                                                  | 274                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Split                                                                             | NA                                                                                                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     |                                                                                   | 8                                                                                 | 8                                                                                                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                     | 8                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     | 6                                                                                 | 8                                                                                 | 8                                                                                                                                                                   | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 9.5                                                                               | 10.5                                                                                                                                                                                                                                                  | 33.5                                                                                                                                                                                                                                                  | 33.5                                                                              | 10.0                                                                              | 10.0                                                                                                                                                                | 10.0                                                                                |
| Total Split (s)      | 10.0                                                                              | 49.0                                                                                                                                                                                                                                                  | 39.0                                                                                                                                                                                                                                                  | 39.0                                                                              | 36.0                                                                              | 36.0                                                                                                                                                                | 36.0                                                                                |
| Total Split (%)      | 11.8%                                                                             | 57.6%                                                                                                                                                                                                                                                 | 45.9%                                                                                                                                                                                                                                                 | 45.9%                                                                             | 42.4%                                                                             | 42.4%                                                                                                                                                               | 42.4%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                               | 4.0                                                                               | 4.0                                                                                                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.5                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Lead/Lag             | Lag                                                                               |                                                                                                                                                                                                                                                       | Lead                                                                                                                                                                                                                                                  | Lead                                                                              |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                                   | Yes                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | Max                                                                               | Max                                                                                                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 85

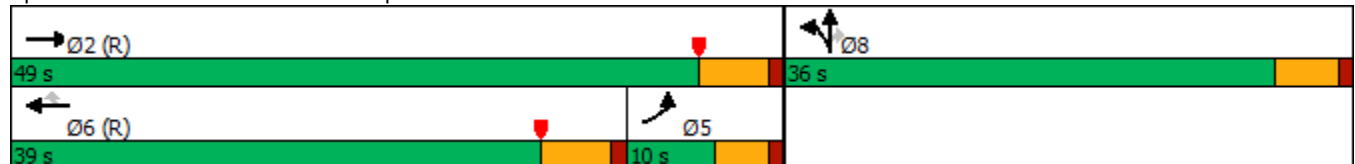
Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/28/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |   |                                                                                      |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)       | 91                                                                                | 1736                                                                                                                                                                                                                                                  | 67                                                                                | 0                                                                                 | 2487                                                                                                                                                                                                                                                  | 211                                                                               | 1165                                                                                | 35                                                                                                                                                                      | 274                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 91                                                                                | 1736                                                                                                                                                                                                                                                  | 67                                                                                | 0                                                                                 | 2487                                                                                                                                                                                                                                                  | 211                                                                               | 1165                                                                                | 35                                                                                                                                                                      | 274                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h         | 93                                                                                | 1771                                                                                                                                                                                                                                                  | 68                                                                                | 0                                                                                 | 2538                                                                                                                                                                                                                                                  | 195                                                                               | 1272                                                                                | 0                                                                                                                                                                       | 158                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor             | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                                | 0.98                                                                                                                                                                    | 0.98                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                   | 330                                                                               | 3283                                                                                                                                                                                                                                                  | 126                                                                               | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green              | 0.36                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 0.39                                                                                                                                                                                                                                                  | 0.39                                                                              | 0.36                                                                                | 0.00                                                                                                                                                                    | 0.36                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h              | 1810                                                                              | 5121                                                                                                                                                                                                                                                  | 196                                                                               | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1573                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h         | 93                                                                                | 1195                                                                                                                                                                                                                                                  | 644                                                                               | 0                                                                                 | 2538                                                                                                                                                                                                                                                  | 195                                                                               | 1272                                                                                | 0                                                                                                                                                                       | 158                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1859                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1573                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 3.1                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 33.5                                                                                                                                                                                                                                                  | 7.3                                                                               | 29.3                                                                                | 0.0                                                                                                                                                                     | 5.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 3.1                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 33.5                                                                                                                                                                                                                                                  | 7.3                                                                               | 29.3                                                                                | 0.0                                                                                                                                                                     | 5.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.11                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 330                                                                               | 2217                                                                                                                                                                                                                                                  | 1192                                                                              | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.28                                                                              | 0.54                                                                                                                                                                                                                                                  | 0.54                                                                              | 0.00                                                                              | 1.24                                                                                                                                                                                                                                                  | 0.31                                                                              | 0.96                                                                                | 0.00                                                                                                                                                                    | 0.27                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 330                                                                               | 2217                                                                                                                                                                                                                                                  | 1192                                                                              | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 2.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.72                                                                              | 0.72                                                                                                                                                                                                                                                  | 0.72                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 23.1                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 25.8                                                                                                                                                                                                                                                  | 17.8                                                                              | 26.4                                                                                | 0.0                                                                                                                                                                     | 19.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 0.2                                                                               | 0.7                                                                                                                                                                                                                                                   | 1.3                                                                               | 0.0                                                                               | 113.0                                                                                                                                                                                                                                                 | 1.3                                                                               | 17.5                                                                                | 0.0                                                                                                                                                                     | 1.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 1.2                                                                               | 0.2                                                                                                                                                                                                                                                   | 0.4                                                                               | 0.0                                                                               | 33.0                                                                                                                                                                                                                                                  | 2.5                                                                               | 14.4                                                                                | 0.0                                                                                                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 23.3                                                                              | 0.7                                                                                                                                                                                                                                                   | 1.3                                                                               | 0.0                                                                               | 138.8                                                                                                                                                                                                                                                 | 19.1                                                                              | 43.9                                                                                | 0.0                                                                                                                                                                     | 20.1                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | C                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | F                                                                                                                                                                                                                                                     | B                                                                                 | D                                                                                   | A                                                                                                                                                                       | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 1932                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2733                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1430                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 2.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 130.2                                                                             |                                                                                                                                                                                                                                                       |                                                                                   | 41.3                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | F                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | D                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 60.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 21.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 39.0                                                                                |                                                                                                                                                                         |                                                                                     | 36.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 5.5                                                                               |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 43.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 34                                                                                |                                                                                                                                                                         |                                                                                     | 31.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.1                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 35.5                                                                                |                                                                                                                                                                         |                                                                                     | 31.3                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 16.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                                 |                                                                                                                                                                         |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |

### Intersection Summary

HCM 6th Ctrl Delay 68.7

HCM 6th LOS E

### Notes

User approved volume balancing among the lanes for turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/29/2019

|                      |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 12                                                                                | 3282                                                                              | 72                                                                                | 2775                                                                              | 19                                                                                | 59                                                                                | 0                                                                                   | 58                                                                                  | 10                                                                                  | 0                                                                                   | 9                                                                                   |
| Future Volume (vph)  | 12                                                                                | 3282                                                                              | 72                                                                                | 2775                                                                              | 19                                                                                | 59                                                                                | 0                                                                                   | 58                                                                                  | 10                                                                                  | 0                                                                                   | 9                                                                                   |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 30.6                                                                              | 30.6                                                                                | 30.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 75.0                                                                              | 10.0                                                                              | 75.8                                                                              | 75.8                                                                              | 35.0                                                                              | 35.0                                                                                | 35.0                                                                                | 35.0                                                                                | 35.0                                                                                | 35.0                                                                                |
| Total Split (%)      | 7.7%                                                                              | 62.5%                                                                             | 8.3%                                                                              | 63.2%                                                                             | 63.2%                                                                             | 29.2%                                                                             | 29.2%                                                                               | 29.2%                                                                               | 29.2%                                                                               | 29.2%                                                                               | 29.2%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.

|                                                                                     |                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø4                                                                                    |
| 10 s                                                                                | 75 s                                                                                | 35 s                                                                                  |
|  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              | Ø8                                                                                    |
| 9.2 s                                                                               | 75.8 s                                                                              | 35 s                                                                                  |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/29/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 12                                                                                | 3282                                                                                                                                                                                                                                                  | 41                                                                                | 72                                                                                | 2775                                                                                                                                                                                                                                                  | 19                                                                                | 59                                                                                 | 0                                                                                   | 58                                                                                  | 10                                                                                  | 0                                                                                   | 9                                                                                   |
| Future Volume (veh/h)        | 12                                                                                | 3282                                                                                                                                                                                                                                                  | 41                                                                                | 72                                                                                | 2775                                                                                                                                                                                                                                                  | 19                                                                                | 59                                                                                 | 0                                                                                   | 58                                                                                  | 10                                                                                  | 0                                                                                   | 9                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 13                                                                                | 3455                                                                                                                                                                                                                                                  | 41                                                                                | 76                                                                                | 2921                                                                                                                                                                                                                                                  | 20                                                                                | 62                                                                                 | 0                                                                                   | 39                                                                                  | 11                                                                                  | 0                                                                                   | -4                                                                                  |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 27                                                                                | 3209                                                                                                                                                                                                                                                  | 38                                                                                | 87                                                                                | 3446                                                                                                                                                                                                                                                  | 973                                                                               | 0                                                                                  | 0                                                                                   | 406                                                                                 | 411                                                                                 | 0                                                                                   | 408                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.57                                                                                                                                                                                                                                                  | 0.57                                                                              | 0.05                                                                              | 0.60                                                                                                                                                                                                                                                  | 0.60                                                                              | 0.25                                                                               | 0.00                                                                                | 0.25                                                                                | 0.25                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5622                                                                                                                                                                                                                                                  | 66                                                                                | 1810                                                                              | 5700                                                                                                                                                                                                                                                  | 1610                                                                              | 0                                                                                  | 0                                                                                   | 1604                                                                                | 1385                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 13                                                                                | 2331                                                                                                                                                                                                                                                  | 1165                                                                              | 76                                                                                | 2921                                                                                                                                                                                                                                                  | 20                                                                                | 62                                                                                 | 0                                                                                   | 39                                                                                  | 11                                                                                  | 0                                                                                   | -4                                                                                  |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                                                                                                                                                                                                  | 1888                                                                              | 1810                                                                              | 1900                                                                                                                                                                                                                                                  | 1610                                                                              | 0                                                                                  | 0                                                                                   | 1604                                                                                | 1385                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.9                                                                               | 68.5                                                                                                                                                                                                                                                  | 68.5                                                                              | 5.0                                                                               | 49.9                                                                                                                                                                                                                                                  | 0.6                                                                               | 0.0                                                                                | 0.0                                                                                 | 2.2                                                                                 | 0.7                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.9                                                                               | 68.5                                                                                                                                                                                                                                                  | 68.5                                                                              | 5.0                                                                               | 49.9                                                                                                                                                                                                                                                  | 0.6                                                                               | 0.0                                                                                | 0.0                                                                                 | 2.2                                                                                 | 0.7                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.04                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 27                                                                                | 2169                                                                                                                                                                                                                                                  | 1078                                                                              | 87                                                                                | 3446                                                                                                                                                                                                                                                  | 973                                                                               | 0                                                                                  | 0                                                                                   | 406                                                                                 | 411                                                                                 | 0                                                                                   | 408                                                                                 |
| V/C Ratio(X)                 | 0.49                                                                              | 1.07                                                                                                                                                                                                                                                  | 1.08                                                                              | 0.87                                                                              | 0.85                                                                                                                                                                                                                                                  | 0.02                                                                              | 0.00                                                                               | 0.00                                                                                | 0.10                                                                                | 0.03                                                                                | 0.00                                                                                | -0.01                                                                               |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2169                                                                                                                                                                                                                                                  | 1078                                                                              | 87                                                                                | 3446                                                                                                                                                                                                                                                  | 973                                                                               | 0                                                                                  | 0                                                                                   | 406                                                                                 | 411                                                                                 | 0                                                                                   | 408                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.73                                                                              | 0.73                                                                                                                                                                                                                                                  | 0.73                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.7                                                                              | 25.7                                                                                                                                                                                                                                                  | 25.7                                                                              | 56.7                                                                              | 19.2                                                                                                                                                                                                                                                  | 9.5                                                                               | 0.0                                                                                | 0.0                                                                                 | 34.3                                                                                | 33.7                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 5.1                                                                               | 42.9                                                                                                                                                                                                                                                  | 52.1                                                                              | 43.5                                                                              | 2.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.5                                                                                 | 0.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.4                                                                               | 38.9                                                                                                                                                                                                                                                  | 41.4                                                                              | 3.3                                                                               | 19.0                                                                                                                                                                                                                                                  | 0.2                                                                               | 1.4                                                                                | 0.0                                                                                 | 0.9                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 63.8                                                                              | 68.6                                                                                                                                                                                                                                                  | 77.9                                                                              | 100.2                                                                             | 21.3                                                                                                                                                                                                                                                  | 9.5                                                                               | 0.0                                                                                | 0.0                                                                                 | 34.8                                                                                | 33.8                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | F                                                                                                                                                                                                                                                     | F                                                                                 | F                                                                                 | C                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                  | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 3509                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 3017                                                                                                                                                                                                                                                  |                                                                                   |                                                                                    |                                                                                     | 101                                                                                 |                                                                                     | 7                                                                                   |                                                                                     |
| Approach Delay, s/veh        | 71.7                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 23.2                                                                                                                                                                                                                                                  |                                                                                   |                                                                                    |                                                                                     | 0.0                                                                                 |                                                                                     | 53.2                                                                                |                                                                                     |
| Approach LOS                 | E                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | C                                                                                                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                     | A                                                                                   |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 4                                                                                 | 5                                                                                                                                                                                                                                                     | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.0                                                                              | 75.0                                                                                                                                                                                                                                                  |                                                                                   | 35.0                                                                              | 6.0                                                                                                                                                                                                                                                   | 79.0                                                                              |                                                                                    | 35.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             | 6.5                                                                                                                                                                                                                                                   |                                                                                   | 4.6                                                                               | * 4.2                                                                                                                                                                                                                                                 | 6.5                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 5.8                                                                             | 68.5                                                                                                                                                                                                                                                  |                                                                                   | 30.4                                                                              | * 5                                                                                                                                                                                                                                                   | 69.3                                                                              |                                                                                    | 30.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+l1), s | 7.0                                                                               | 70.5                                                                                                                                                                                                                                                  |                                                                                   | 2.7                                                                               | 2.9                                                                                                                                                                                                                                                   | 51.9                                                                              |                                                                                    | 4.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 16.8                                                                              |                                                                                    | 0.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

HCM 6th Ctrl Delay 48.5

HCM 6th LOS D

### Notes

User approved pedestrian interval to be less than phase max green.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

05/29/2019



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | Ø6   |
|----------------------|------|-------|------|-------|-------|-------|------|
| Lane Configurations  | ↰    | ↰↰↰   | ↰    | ↰↰↰   |       | ↰↰    |      |
| Traffic Volume (vph) | 4    | 3345  | 4    | 2866  | 6     | 0     |      |
| Future Volume (vph)  | 4    | 3345  | 4    | 2866  | 6     | 0     |      |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    |      |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     | 6    |
| Permitted Phases     |      |       |      |       | 2     |       |      |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     |      |
| Switch Phase         |      |       |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.2  | 23.5  | 9.2  | 23.5  | 14.6  | 14.6  | 14.6 |
| Total Split (s)      | 10.0 | 95.0  | 10.0 | 95.0  | 15.0  | 15.0  | 15.0 |
| Total Split (%)      | 8.3% | 79.2% | 8.3% | 79.2% | 12.5% | 12.5% | 13%  |
| Yellow Time (s)      | 3.2  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   |      |
| Total Lost Time (s)  | 4.2  | 6.5   | 4.2  | 6.5   |       | 4.6   |      |
| Lead/Lag             | Lag  | Lead  | Lag  | Lead  |       |       |      |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |      |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|      |          |      |
|------|----------|------|
| ↰ Ø2 | → Ø4 (R) | ↰ Ø3 |
| 15 s | 95 s     | 10 s |
| ↰ Ø6 | → Ø8 (R) | ↰ Ø7 |
| 15 s | 95 s     | 10 s |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/29/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |                                                                                   |                                                                                    |   |                                                                                     |                                                                                     |   |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 3345                                                                                                                                                                                                                                                  | 1                                                                                 | 4                                                                                 | 2866                                                                                                                                                                                                                                                  | 0                                                                                 | 6                                                                                  | 0                                                                                                                                                                       | 2                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 3345                                                                                                                                                                                                                                                  | 1                                                                                 | 4                                                                                 | 2866                                                                                                                                                                                                                                                  | 0                                                                                 | 6                                                                                  | 0                                                                                                                                                                       | 2                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                                                                                                         |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 3636                                                                                                                                                                                                                                                  | 1                                                                                 | 4                                                                                 | 3115                                                                                                                                                                                                                                                  | 0                                                                                 | 7                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                                                                                                    | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 213                                                                               | 3950                                                                                                                                                                                                                                                  | 1                                                                                 | 213                                                                               | 3825                                                                                                                                                                                                                                                  | 0                                                                                 | 85                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 33                                                                                                                                                                      | 0                                                                                   |
| Arrive On Green              | 0.12                                                                              | 0.74                                                                                                                                                                                                                                                  | 0.74                                                                              | 0.12                                                                              | 0.74                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.02                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5356                                                                                                                                                                                                                                                  | 1                                                                                 | 1810                                                                              | 5358                                                                                                                                                                                                                                                  | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Grp Volume(v), veh/h         | 4                                                                                 | 2347                                                                                                                                                                                                                                                  | 1290                                                                              | 4                                                                                 | 3115                                                                                                                                                                                                                                                  | 0                                                                                 | 7                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1900                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 66.6                                                                                                                                                                                                                                                  | 66.6                                                                              | 0.2                                                                               | 47.4                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.6                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 66.6                                                                                                                                                                                                                                                  | 66.6                                                                              | 0.2                                                                               | 47.4                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.6                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 0.00                                                                                | 0.00                                                                                |                                                                                                                                                                         | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 213                                                                               | 2550                                                                                                                                                                                                                                                  | 1401                                                                              | 213                                                                               | 3825                                                                                                                                                                                                                                                  | 0                                                                                 | 85                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 33                                                                                                                                                                      | 0                                                                                   |
| V/C Ratio(X)                 | 0.02                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.02                                                                              | 0.81                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.08                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 213                                                                               | 2550                                                                                                                                                                                                                                                  | 1401                                                                              | 213                                                                               | 3825                                                                                                                                                                                                                                                  | 0                                                                                 | 185                                                                                | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 165                                                                                                                                                                     | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(I)           | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                  | 0.09                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 46.8                                                                              | 12.9                                                                                                                                                                                                                                                  | 12.9                                                                              | 46.8                                                                              | 10.3                                                                                                                                                                                                                                                  | 0.0                                                                               | 58.2                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.7                                                                                                                                                                                                                                                   | 1.3                                                                               | 0.0                                                                               | 2.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 17.6                                                                                                                                                                                                                                                  | 19.5                                                                              | 0.1                                                                               | 13.1                                                                                                                                                                                                                                                  | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 46.8                                                                              | 13.6                                                                                                                                                                                                                                                  | 14.2                                                                              | 46.8                                                                              | 12.4                                                                                                                                                                                                                                                  | 0.0                                                                               | 58.6                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | B                                                                                                                                                                                                                                                     | B                                                                                 | D                                                                                 | B                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                  | A                                                                                                                                                                       | A                                                                                   | A                                                                                   | A                                                                                                                                                                       | A                                                                                   |
| Approach Vol, veh/h          | 3641                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 3119                                                                                                                                                                                                                                                  |                                                                                   | 7                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     | 0                                                                                                                                                                       |                                                                                     |
| Approach Delay, s/veh        | 13.8                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 12.4                                                                                                                                                                                                                                                  |                                                                                   | 58.6                                                                               |                                                                                                                                                                         |                                                                                     |                                                                                     | 0.0                                                                                                                                                                     |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | B                                                                                                                                                                                                                                                     |                                                                                   | E                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 3                                                                                 | 4                                                                                 |                                                                                                                                                                                                                                                       | 6                                                                                 | 7                                                                                  | 8                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 6.7                                                                               |                                                                                                                                                                                                                                                       | 18.3                                                                              | 95.0                                                                              |                                                                                                                                                                                                                                                       | 6.7                                                                               | 18.3                                                                               | 95.0                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       | 4.2                                                                               | * 6.5                                                                             |                                                                                                                                                                                                                                                       | 4.6                                                                               | 4.2                                                                                | * 6.5                                                                                                                                                                   |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                                                                                                                                                                                       | 5.8                                                                               | * 89                                                                              |                                                                                                                                                                                                                                                       | 10.4                                                                              | 5.8                                                                                | * 89                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.6                                                                               |                                                                                                                                                                                                                                                       | 2.2                                                                               | 68.6                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               | 2.2                                                                                | 49.4                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               | 19.7                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               | 0.0                                                                                | 37.4                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 13.2                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | B                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

Intersection

Int Delay, s/veh 3.2

| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↑↑↑  |      | ↑    | ↑↑↑  | ↑    | ↑    |
| Traffic Vol, veh/h       | 3347 | 14   | 27   | 2870 | 2    | 11   |
| Future Vol, veh/h        | 3347 | 14   | 27   | 2870 | 2    | 11   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | 155  | -    | 0    | 0    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 3638 | 15   | 29   | 3120 | 2    | 12   |

| Major/Minor          | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0      | 0      | 3653   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 5.3    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 3.1    |
| Pot Cap-1 Maneuver   | -      | -      | ~ 18   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | ~ 18   |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | EB | WB | NB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0  | 7  |    |
| HCM LOS              |    |    | -  |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL      | WBT |
|-----------------------|-------|-------|-----|-----|----------|-----|
| Capacity (veh/h)      | -     | 58    | -   | -   | ~ 18     | -   |
| HCM Lane V/C Ratio    | -     | 0.206 | -   | -   | 1.63     | -   |
| HCM Control Delay (s) | -     | 82.5  | -   | -   | \$ 755.3 | -   |
| HCM Lane LOS          | -     | F     | -   | -   | F        | -   |
| HCM 95th %tile Q(veh) | -     | 0.7   | -   | -   | 4.1      | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/29/2019



| Lane Group           | EBL  | EBT   | WBL  | WBT   | WBR   | NBL  | NBR   | SBL  | SBR   |
|----------------------|------|-------|------|-------|-------|------|-------|------|-------|
| Lane Configurations  |      |       |      |       |       |      |       |      |       |
| Traffic Volume (vph) | 18   | 3683  | 101  | 2859  | 25    | 36   | 186   | 34   | 21    |
| Future Volume (vph)  | 18   | 3683  | 101  | 2859  | 25    | 36   | 186   | 34   | 21    |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | Prot | Perm  | Prot | Perm  |
| Protected Phases     | 5    | 2     | 1    | 6     |       | 3    |       | 7    |       |
| Permitted Phases     |      |       |      |       | 6     |      | 8     |      | 4     |
| Detector Phase       | 5    | 2     | 1    | 6     | 6     | 3    | 8     | 7    | 4     |
| Switch Phase         |      |       |      |       |       |      |       |      |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 5.0  | 10.0  | 5.0  | 10.0  |
| Minimum Split (s)    | 9.6  | 16.5  | 9.6  | 30.5  | 30.5  | 9.6  | 26.6  | 9.6  | 14.6  |
| Total Split (s)      | 9.6  | 72.2  | 11.0 | 73.6  | 73.6  | 10.0 | 27.2  | 9.6  | 26.8  |
| Total Split (%)      | 8.0% | 60.2% | 9.2% | 61.3% | 61.3% | 8.3% | 22.7% | 8.0% | 22.3% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 5.5   | 3.6  | 3.6   | 3.6  | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0  | 1.0   | 1.0  | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   |
| Total Lost Time (s)  | 4.6  | 6.5   | 4.6  | 6.5   | 6.5   | 4.6  | 4.6   | 4.6  | 4.6   |
| Lead/Lag             | Lead | Lag   | Lead | Lag   | Lag   | Lead | Lag   | Lead | Lag   |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   | Yes   | Yes  | Yes   | Yes  | Yes   |
| Recall Mode          | None | C-Max | None | None  | None  | None | None  | None | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 76.7 (64%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.

|       |    |        |        |       |    |        |    |
|-------|----|--------|--------|-------|----|--------|----|
|       | Ø1 |        | Ø2 (R) |       | Ø3 |        | Ø4 |
| 11 s  |    | 72.2 s |        | 10 s  |    | 26.8 s |    |
|       | Ø5 |        | Ø6     |       | Ø7 |        | Ø8 |
| 9.6 s |    | 73.6 s |        | 9.6 s |    | 27.2 s |    |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 5: Alessandro Bl. & San Gorgonio Dr. 05/29/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |   |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |   |
| Lane Configurations          |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |   |
| Traffic Volume (veh/h)       | 18                                                                                | 3683                                                                              | 20                                                                                | 101                                                                               | 2859                                                                              | 25                                                                                | 36                                                                                  | 0                                                                                   | 186                                                                                 | 34                                                                                  | 0                                                                                   | 21                                                                                  |   |
| Future Volume (veh/h)        | 18                                                                                | 3683                                                                              | 20                                                                                | 101                                                                               | 2859                                                                              | 25                                                                                | 36                                                                                  | 0                                                                                   | 186                                                                                 | 34                                                                                  | 0                                                                                   | 21                                                                                  |   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |   |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |   |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |   |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |   |
| Adj Flow Rate, veh/h         | 20                                                                                | 4047                                                                              | 11                                                                                | 110                                                                               | 3142                                                                              | 26                                                                                | 39                                                                                  | 0                                                                                   | 126                                                                                 | 37                                                                                  | 0                                                                                   | 0                                                                                   |   |
| Peak Hour Factor             | 0.91                                                                              | 0.91                                                                              | 0.92                                                                              | 0.92                                                                              | 0.91                                                                              | 0.91                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.91                                                                                | 0.92                                                                                | 0.91                                                                                |   |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |   |
| Cap, veh/h                   | 37                                                                                | 3659                                                                              | 10                                                                                | 97                                                                                | 3859                                                                              | 1066                                                                              | 55                                                                                  | 181                                                                                 | 153                                                                                 | 69                                                                                  | 196                                                                                 |                                                                                     |   |
| Arrive On Green              | 0.02                                                                              | 0.64                                                                              | 0.64                                                                              | 0.05                                                                              | 0.68                                                                              | 0.68                                                                              | 0.03                                                                                | 0.00                                                                                | 0.10                                                                                | 0.04                                                                                | 0.00                                                                                | 0.00                                                                                |   |
| Sat Flow, veh/h              | 1810                                                                              | 5682                                                                              | 15                                                                                | 1810                                                                              | 5700                                                                              | 1575                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |   |
| Grp Volume(v), veh/h         | 20                                                                                | 2705                                                                              | 1353                                                                              | 110                                                                               | 3142                                                                              | 26                                                                                | 39                                                                                  | 0                                                                                   | 126                                                                                 | 37                                                                                  | 0                                                                                   | 0                                                                                   |   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                              | 1897                                                                              | 1810                                                                              | 1900                                                                              | 1575                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |   |
| Q Serve(g_s), s              | 1.3                                                                               | 77.3                                                                              | 77.3                                                                              | 6.4                                                                               | 47.6                                                                              | 0.7                                                                               | 2.6                                                                                 | 0.0                                                                                 | 9.2                                                                                 | 2.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Cycle Q Clear(g_c), s        | 1.3                                                                               | 77.3                                                                              | 77.3                                                                              | 6.4                                                                               | 47.6                                                                              | 0.7                                                                               | 2.6                                                                                 | 0.0                                                                                 | 9.2                                                                                 | 2.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |   |
| Lane Grp Cap(c), veh/h       | 37                                                                                | 2447                                                                              | 1222                                                                              | 97                                                                                | 3859                                                                              | 1066                                                                              | 55                                                                                  | 181                                                                                 | 153                                                                                 | 69                                                                                  | 196                                                                                 |                                                                                     |   |
| V/C Ratio(X)                 | 0.55                                                                              | 1.11                                                                              | 1.11                                                                              | 1.14                                                                              | 0.81                                                                              | 0.02                                                                              | 0.71                                                                                | 0.00                                                                                | 0.82                                                                                | 0.53                                                                                | 0.00                                                                                |                                                                                     |   |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2447                                                                              | 1222                                                                              | 97                                                                                | 3859                                                                              | 1066                                                                              | 81                                                                                  | 358                                                                                 | 303                                                                                 | 75                                                                                  | 352                                                                                 |                                                                                     |   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |   |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.09                                                                              | 0.09                                                                              | 0.09                                                                              | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |   |
| Uniform Delay (d), s/veh     | 58.2                                                                              | 21.4                                                                              | 21.4                                                                              | 56.8                                                                              | 13.9                                                                              | 6.4                                                                               | 57.7                                                                                | 0.0                                                                                 | 53.3                                                                                | 56.6                                                                                | 0.0                                                                                 | 0.0                                                                                 |   |
| Incr Delay (d2), s/veh       | 4.6                                                                               | 54.3                                                                              | 60.4                                                                              | 74.5                                                                              | 0.1                                                                               | 0.0                                                                               | 15.6                                                                                | 0.0                                                                                 | 10.4                                                                                | 6.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| %ile BackOfQ(50%),veh/ln     | 0.6                                                                               | 45.5                                                                              | 47.5                                                                              | 4.8                                                                               | 15.8                                                                              | 0.2                                                                               | 1.4                                                                                 | 0.0                                                                                 | 4.2                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |   |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| LnGrp Delay(d),s/veh         | 62.8                                                                              | 75.6                                                                              | 81.8                                                                              | 131.3                                                                             | 14.1                                                                              | 6.4                                                                               | 73.2                                                                                | 0.0                                                                                 | 63.7                                                                                | 62.9                                                                                | 0.0                                                                                 | 0.0                                                                                 |   |
| LnGrp LOS                    | E                                                                                 | F                                                                                 | F                                                                                 | F                                                                                 | B                                                                                 | A                                                                                 | E                                                                                   | A                                                                                   | E                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |   |
| Approach Vol, veh/h          | 4078                                                                              |                                                                                   |                                                                                   | 3278                                                                              |                                                                                   |                                                                                   | 165                                                                                 |                                                                                     |                                                                                     | 37                                                                                  |                                                                                     |                                                                                     | A |
| Approach Delay, s/veh        | 77.6                                                                              |                                                                                   |                                                                                   | 18.0                                                                              |                                                                                   |                                                                                   | 65.9                                                                                |                                                                                     |                                                                                     | 62.9                                                                                |                                                                                     |                                                                                     |   |
| Approach LOS                 | E                                                                                 |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   | E                                                                                   |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |   |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              | 83.8                                                                              | 8.2                                                                               | 17.0                                                                              | 7.0                                                                               | 87.7                                                                              | 9.2                                                                                 | 16.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Change Period (Y+Rc), s      | 4.6                                                                               | 6.5                                                                               | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 6.5                                                                               | 4.6                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Max Green Setting (Gmax), s  | 6.4                                                                               | 65.7                                                                              | 5.4                                                                               | 22.2                                                                              | 5.0                                                                               | 67.1                                                                              | 5.0                                                                                 | 22.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Max Q Clear Time (g_c+I1), s | 8.4                                                                               | 79.3                                                                              | 4.6                                                                               | 0.0                                                                               | 3.3                                                                               | 49.6                                                                              | 4.4                                                                                 | 11.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 17.1                                                                              | 0.0                                                                                 | 0.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| HCM 6th Ctrl Delay           | 51.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| HCM 6th LOS                  | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/29/2019

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 332                                                                               | 2688                                                                              | 716                                                                               | 273                                                                               | 2352                                                                              | 232                                                                               | 536                                                                                | 416                                                                                 | 295                                                                                 | 245                                                                                 | 855                                                                                 | 494                                                                                 |
| Future Volume (vph)  | 332                                                                               | 2688                                                                              | 716                                                                               | 273                                                                               | 2352                                                                              | 232                                                                               | 536                                                                                | 416                                                                                 | 295                                                                                 | 245                                                                                 | 855                                                                                 | 494                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                                | 10.0                                                                                | 5.0                                                                                 | 5.0                                                                                 | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                                | 15.8                                                                                | 8.7                                                                                 | 8.7                                                                                 | 49.8                                                                                | 49.8                                                                                |
| Total Split (s)      | 13.0                                                                              | 47.0                                                                              | 47.0                                                                              | 10.0                                                                              | 44.0                                                                              | 44.0                                                                              | 12.0                                                                               | 51.0                                                                                | 10.0                                                                                | 12.0                                                                                | 51.0                                                                                | 51.0                                                                                |
| Total Split (%)      | 10.8%                                                                             | 39.2%                                                                             | 39.2%                                                                             | 8.3%                                                                              | 36.7%                                                                             | 36.7%                                                                             | 10.0%                                                                              | 42.5%                                                                               | 8.3%                                                                                | 10.0%                                                                               | 42.5%                                                                               | 42.5%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                                | 4.8                                                                                 | 3.2                                                                                 | 3.2                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                                | 1.0                                                                                 | 0.5                                                                                 | 0.5                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                                | 5.8                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                                | Lag                                                                                 | Lead                                                                                | Lead                                                                                | Lead                                                                                | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                               | Max                                                                                 | None                                                                                | None                                                                                | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

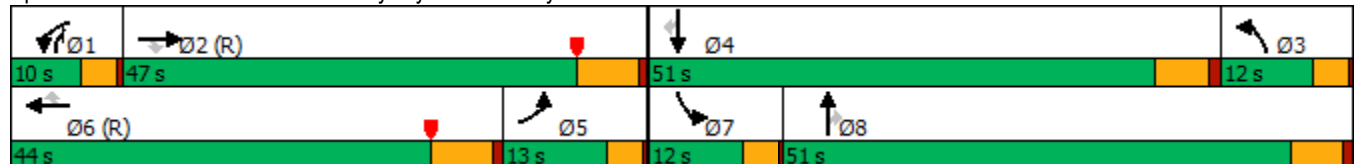
Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/29/2019

|                              |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |  |                                                                                      |                                                                                                                                                                          |                                                                                      |                                                                                      |                                                                                                                                                                          |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                                                                                                         | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                                                                                                         | SBR                                                                                 |
| Lane Configurations          |  |    |  |   |    |  |   |    |   |   |    |  |
| Traffic Volume (veh/h)       | 332                                                                               | 2688                                                                                                                                                                                                                                                  | 716                                                                               | 273                                                                                                                                                                 | 2352                                                                                                                                                                                                                                                  | 232                                                                               | 536                                                                                                                                                                     | 416                                                                                                                                                                                                                                                         | 295                                                                                                                                                                     | 245                                                                                                                                                                     | 855                                                                                                                                                                                                                                                         | 494                                                                                 |
| Future Volume (veh/h)        | 332                                                                               | 2688                                                                                                                                                                                                                                                  | 716                                                                               | 273                                                                                                                                                                 | 2352                                                                                                                                                                                                                                                  | 232                                                                               | 536                                                                                                                                                                     | 416                                                                                                                                                                                                                                                         | 295                                                                                                                                                                     | 245                                                                                                                                                                     | 855                                                                                                                                                                                                                                                         | 494                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                     | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                         | No                                                                                                                                                                                                                                                          |                                                                                                                                                                         |                                                                                                                                                                         | No                                                                                                                                                                                                                                                          |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                    | 1900                                                                                                                                                                                                                                                        | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                                                                                                        | 1900                                                                                |
| Adj Flow Rate, veh/h         | 369                                                                               | 2987                                                                                                                                                                                                                                                  | 796                                                                               | 303                                                                                                                                                                 | 2613                                                                                                                                                                                                                                                  | 258                                                                               | 596                                                                                                                                                                     | 462                                                                                                                                                                                                                                                         | 328                                                                                                                                                                     | 272                                                                                                                                                                     | 950                                                                                                                                                                                                                                                         | 549                                                                                 |
| Peak Hour Factor             | 0.90                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                                                                                                                                                                                                  | 0.90                                                                              | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                                                                                                        | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                                                                                                        | 0.90                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                                                                                                           | 0                                                                                   |
| Cap, veh/h                   | 2144                                                                              | 7615                                                                                                                                                                                                                                                  | 2364                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1423                                                                                                                                                                                                                                                        | 1266                                                                                                                                                                    | 243                                                                                                                                                                     | 1360                                                                                                                                                                                                                                                        | 606                                                                                 |
| Arrive On Green              | 0.39                                                                              | 0.48                                                                                                                                                                                                                                                  | 0.48                                                                              | 0.05                                                                                                                                                                | 0.31                                                                                                                                                                                                                                                  | 0.31                                                                              | 0.07                                                                                                                                                                    | 0.39                                                                                                                                                                                                                                                        | 0.39                                                                                                                                                                    | 0.07                                                                                                                                                                    | 0.38                                                                                                                                                                                                                                                        | 0.38                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                    | 3610                                                                                                                                                                                                                                                        | 2834                                                                                                                                                                    | 3510                                                                                                                                                                    | 3610                                                                                                                                                                                                                                                        | 1610                                                                                |
| Grp Volume(v), veh/h         | 369                                                                               | 2987                                                                                                                                                                                                                                                  | 796                                                                               | 303                                                                                                                                                                 | 2613                                                                                                                                                                                                                                                  | 258                                                                               | 596                                                                                                                                                                     | 462                                                                                                                                                                                                                                                         | 328                                                                                                                                                                     | 272                                                                                                                                                                     | 950                                                                                                                                                                                                                                                         | 549                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                    | 1805                                                                                                                                                                                                                                                        | 1417                                                                                                                                                                    | 1755                                                                                                                                                                    | 1805                                                                                                                                                                                                                                                        | 1610                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 6.3                                                                                                                                                                 | 37.5                                                                                                                                                                                                                                                  | 37.5                                                                              | 8.3                                                                                                                                                                     | 10.7                                                                                                                                                                                                                                                        | 8.7                                                                                                                                                                     | 8.3                                                                                                                                                                     | 26.7                                                                                                                                                                                                                                                        | 38.7                                                                                |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 6.3                                                                                                                                                                 | 37.5                                                                                                                                                                                                                                                  | 37.5                                                                              | 8.3                                                                                                                                                                     | 10.7                                                                                                                                                                                                                                                        | 8.7                                                                                                                                                                     | 8.3                                                                                                                                                                     | 26.7                                                                                                                                                                                                                                                        | 38.7                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                                                                                                             | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 2144                                                                              | 7615                                                                                                                                                                                                                                                  | 2364                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1423                                                                                                                                                                                                                                                        | 1266                                                                                                                                                                    | 243                                                                                                                                                                     | 1360                                                                                                                                                                                                                                                        | 606                                                                                 |
| V/C Ratio(X)                 | 0.17                                                                              | 0.39                                                                                                                                                                                                                                                  | 0.34                                                                              | 1.64                                                                                                                                                                | 1.61                                                                                                                                                                                                                                                  | 0.51                                                                              | 2.45                                                                                                                                                                    | 0.32                                                                                                                                                                                                                                                        | 0.26                                                                                                                                                                    | 1.12                                                                                                                                                                    | 0.70                                                                                                                                                                                                                                                        | 0.91                                                                                |
| Avail Cap(c_a), veh/h        | 2144                                                                              | 7615                                                                                                                                                                                                                                                  | 2364                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1423                                                                                                                                                                                                                                                        | 1266                                                                                                                                                                    | 243                                                                                                                                                                     | 1360                                                                                                                                                                                                                                                        | 606                                                                                 |
| HCM Platoon Ratio            | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Upstream Filter(I)           | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                  | 0.09                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 56.8                                                                                                                                                                | 41.2                                                                                                                                                                                                                                                  | 215.7                                                                             | 55.8                                                                                                                                                                    | 25.3                                                                                                                                                                                                                                                        | 20.8                                                                                                                                                                    | 55.9                                                                                                                                                                    | 31.6                                                                                                                                                                                                                                                        | 35.4                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 312.9                                                                                                                                                               | 278.3                                                                                                                                                                                                                                                 | 3.7                                                                               | 666.9                                                                                                                                                                   | 0.6                                                                                                                                                                                                                                                         | 0.5                                                                                                                                                                     | 93.9                                                                                                                                                                    | 3.0                                                                                                                                                                                                                                                         | 19.5                                                                                |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 10.7                                                                                                                                                                | 57.0                                                                                                                                                                                                                                                  | 17.1                                                                              | 26.1                                                                                                                                                                    | 4.5                                                                                                                                                                                                                                                         | 2.8                                                                                                                                                                     | 6.7                                                                                                                                                                     | 11.7                                                                                                                                                                                                                                                        | 17.6                                                                                |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 369.8                                                                                                                                                               | 319.6                                                                                                                                                                                                                                                 | 219.4                                                                             | 722.7                                                                                                                                                                   | 25.9                                                                                                                                                                                                                                                        | 21.3                                                                                                                                                                    | 149.7                                                                                                                                                                   | 34.6                                                                                                                                                                                                                                                        | 54.8                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | F                                                                                                                                                                   | F                                                                                                                                                                                                                                                     | F                                                                                 | F                                                                                                                                                                       | C                                                                                                                                                                                                                                                           | C                                                                                                                                                                       | F                                                                                                                                                                       | C                                                                                                                                                                                                                                                           | D                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 4152                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 3174                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         | 1386                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         | 1771                                                                                                                                                                                                                                                        |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 0.0                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                                                                     | 316.2                                                                                                                                                                                                                                                 |                                                                                   |                                                                                                                                                                         | 324.4                                                                                                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 58.6                                                                                                                                                                                                                                                        |                                                                                     |
| Approach LOS                 |                                                                                   | A                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     | F                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         | F                                                                                                                                                                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         | E                                                                                                                                                                                                                                                           |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 7                                                                                                                                                                       | 8                                                                                                                                                                                                                                                           |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.0                                                                              | 184.8                                                                                                                                                                                                                                                 | 14.1                                                                              | 51.0                                                                                                                                                                | 150.8                                                                                                                                                                                                                                                 | 44.0                                                                              | 12.0                                                                                                                                                                    | 53.1                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 5.8                                                                               | * 5.8                                                                                                                                                               | 6.5                                                                                                                                                                                                                                                   | * 6.5                                                                             | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Max Green Setting (Gmax), s  | 6.3                                                                               | 40.5                                                                                                                                                                                                                                                  | 8.3                                                                               | * 45                                                                                                                                                                | 9.3                                                                                                                                                                                                                                                   | * 38                                                                              | 8.3                                                                                                                                                                     | 45.2                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 8.3                                                                               | 2.0                                                                                                                                                                                                                                                   | 10.3                                                                              | 40.7                                                                                                                                                                | 2.0                                                                                                                                                                                                                                                   | 39.5                                                                              | 10.3                                                                                                                                                                    | 12.7                                                                                                                                                                                                                                                        |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 37.7                                                                                                                                                                                                                                                  | 0.0                                                                               | 3.0                                                                                                                                                                 | 0.3                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 4.4                                                                                                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                                                                                                             |                                                                                     |

#### Intersection Summary

|                    |       |
|--------------------|-------|
| HCM 6th Ctrl Delay | 148.5 |
| HCM 6th LOS        | F     |

#### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/28/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↱     | ↱     |
| Traffic Volume (vph) | 2582  | 2318  | 333   | 0     | 537   |
| Future Volume (vph)  | 2582  | 2318  | 333   | 0     | 537   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 58.0  | 58.0  | 27.0  | 27.0  | 27.0  |
| Total Split (%)      | 68.2% | 68.2% | 31.8% | 31.8% | 31.8% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 33 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.

|          |      |      |
|----------|------|------|
| → Ø2 (R) | 58 s | 27 s |
| ← Ø6 (R) | 58 s |      |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/28/2019

|                                                                      |  |      |      |      |      |      |     |     |     |      |      |      |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|-----|-----|-----|------|------|------|
| Movement                                                             | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL | NBT | NBR | SBL  | SBT  | SBR  |
| Lane Configurations                                                  |                                                                                    | ↑↑↑  |      |      | ↑↑↑  |      |     |     |     | ↖    | ↕    | ↗    |
| Traffic Volume (veh/h)                                               | 0                                                                                  | 2582 | 647  | 0    | 2318 | 183  | 0   | 0   | 0   | 333  | 0    | 537  |
| Future Volume (veh/h)                                                | 0                                                                                  | 2582 | 647  | 0    | 2318 | 183  | 0   | 0   | 0   | 333  | 0    | 537  |
| Initial Q (Qb), veh                                                  | 0                                                                                  | 0    | 0    | 0    | 0    | 0    |     |     |     | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)                                                  | 1.00                                                                               |      | 0.98 | 1.00 |      | 0.98 |     |     |     | 1.00 |      | 1.00 |
| Parking Bus, Adj                                                     | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |     |     |     | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach                                                |                                                                                    | No   |      |      | No   |      |     |     |     |      | No   |      |
| Adj Sat Flow, veh/h/ln                                               | 0                                                                                  | 1900 | 1900 | 0    | 1900 | 1900 |     |     |     | 1900 | 1900 | 1900 |
| Adj Flow Rate, veh/h                                                 | 0                                                                                  | 2747 | 651  | 0    | 2466 | 193  |     |     |     | 517  | 0    | 292  |
| Peak Hour Factor                                                     | 0.94                                                                               | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |     |     |     | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, %                                                 | 0                                                                                  | 0    | 0    | 0    | 0    | 0    |     |     |     | 0    | 0    | 0    |
| Cap, veh/h                                                           | 0                                                                                  | 2806 | 611  | 0    | 3243 | 249  |     |     |     | 779  | 0    | 346  |
| Arrive On Green                                                      | 0.00                                                                               | 0.66 | 0.66 | 0.00 | 0.66 | 0.66 |     |     |     | 0.22 | 0.00 | 0.22 |
| Sat Flow, veh/h                                                      | 0                                                                                  | 4415 | 923  | 0    | 5075 | 376  |     |     |     | 3619 | 0    | 1608 |
| Grp Volume(v), veh/h                                                 | 0                                                                                  | 2193 | 1205 | 0    | 1724 | 935  |     |     |     | 517  | 0    | 292  |
| Grp Sat Flow(s),veh/h/ln                                             | 0                                                                                  | 1729 | 1709 | 0    | 1729 | 1823 |     |     |     | 1810 | 0    | 1608 |
| Q Serve(g_s), s                                                      | 0.0                                                                                | 49.9 | 56.2 | 0.0  | 28.6 | 30.3 |     |     |     | 11.1 | 0.0  | 14.8 |
| Cycle Q Clear(g_c), s                                                | 0.0                                                                                | 49.9 | 56.2 | 0.0  | 28.6 | 30.3 |     |     |     | 11.1 | 0.0  | 14.8 |
| Prop In Lane                                                         | 0.00                                                                               |      | 0.54 | 0.00 |      | 0.21 |     |     |     | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h                                               | 0                                                                                  | 2286 | 1130 | 0    | 2286 | 1205 |     |     |     | 779  | 0    | 346  |
| V/C Ratio(X)                                                         | 0.00                                                                               | 0.96 | 1.07 | 0.00 | 0.75 | 0.78 |     |     |     | 0.66 | 0.00 | 0.84 |
| Avail Cap(c_a), veh/h                                                | 0                                                                                  | 2286 | 1130 | 0    | 2286 | 1205 |     |     |     | 937  | 0    | 416  |
| HCM Platoon Ratio                                                    | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |     |     |     | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)                                                   | 0.00                                                                               | 1.00 | 1.00 | 0.00 | 0.47 | 0.47 |     |     |     | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh                                             | 0.0                                                                                | 13.3 | 14.4 | 0.0  | 9.7  | 10.0 |     |     |     | 30.5 | 0.0  | 32.0 |
| Incr Delay (d2), s/veh                                               | 0.0                                                                                | 11.4 | 46.3 | 0.0  | 1.1  | 2.4  |     |     |     | 1.3  | 0.0  | 12.7 |
| Initial Q Delay(d3),s/veh                                            | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |     |     |     | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln                                             | 0.0                                                                                | 15.6 | 27.9 | 0.0  | 7.2  | 8.4  |     |     |     | 4.7  | 0.0  | 6.6  |
| Unsig. Movement Delay, s/veh                                         |                                                                                    |      |      |      |      |      |     |     |     |      |      |      |
| LnGrp Delay(d),s/veh                                                 | 0.0                                                                                | 24.7 | 60.7 | 0.0  | 10.9 | 12.4 |     |     |     | 31.9 | 0.0  | 44.6 |
| LnGrp LOS                                                            | A                                                                                  | C    | F    | A    | B    | B    |     |     |     | C    | A    | D    |
| Approach Vol, veh/h                                                  |                                                                                    | 3398 |      |      | 2659 |      |     |     |     |      | 809  |      |
| Approach Delay, s/veh                                                |                                                                                    | 37.5 |      |      | 11.4 |      |     |     |     |      | 36.5 |      |
| Approach LOS                                                         |                                                                                    | D    |      |      | B    |      |     |     |     |      | D    |      |
| Timer - Assigned Phs                                                 |                                                                                    | 2    |      | 4    |      | 6    |     |     |     |      |      |      |
| Phs Duration (G+Y+Rc), s                                             |                                                                                    | 61.7 |      | 23.3 |      | 61.7 |     |     |     |      |      |      |
| Change Period (Y+Rc), s                                              |                                                                                    | 5.5  |      | 5.0  |      | 5.5  |     |     |     |      |      |      |
| Max Green Setting (Gmax), s                                          |                                                                                    | 52.5 |      | 22.0 |      | 52.5 |     |     |     |      |      |      |
| Max Q Clear Time (g_c+I1), s                                         |                                                                                    | 58.2 |      | 16.8 |      | 32.3 |     |     |     |      |      |      |
| Green Ext Time (p_c), s                                              |                                                                                    | 0.0  |      | 1.5  |      | 16.6 |     |     |     |      |      |      |
| <b>Intersection Summary</b>                                          |                                                                                    |      |      |      |      |      |     |     |     |      |      |      |
| HCM 6th Ctrl Delay                                                   |                                                                                    |      | 27.3 |      |      |      |     |     |     |      |      |      |
| HCM 6th LOS                                                          |                                                                                    |      | C    |      |      |      |     |     |     |      |      |      |
| <b>Notes</b>                                                         |                                                                                    |      |      |      |      |      |     |     |     |      |      |      |
| User approved volume balancing among the lanes for turning movement. |                                                                                    |      |      |      |      |      |     |     |     |      |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/28/2019



| Lane Group           | EBL   | EBT   | WBT   | WBR   | NBL   | NBT   | NBR   |
|----------------------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations  |       |       |       |       |       |       |       |
| Traffic Volume (vph) | 252   | 2613  | 1765  | 300   | 751   | 68    | 382   |
| Future Volume (vph)  | 252   | 2613  | 1765  | 300   | 751   | 68    | 382   |
| Turn Type            | Prot  | NA    | NA    | Perm  | Split | NA    | Perm  |
| Protected Phases     | 5     | 2     | 6     |       | 8     | 8     |       |
| Permitted Phases     |       |       |       | 6     |       |       | 8     |
| Detector Phase       | 5     | 2     | 6     | 6     | 8     | 8     | 8     |
| Switch Phase         |       |       |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 9.5   | 10.5  | 33.5  | 33.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 10.0  | 55.0  | 45.0  | 45.0  | 34.5  | 34.5  | 34.5  |
| Total Split (%)      | 11.2% | 61.5% | 50.3% | 50.3% | 38.5% | 38.5% | 38.5% |
| Yellow Time (s)      | 3.5   | 4.5   | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.5   | 5.5   | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             | Lead  |       | Lag   | Lag   |       |       |       |
| Lead-Lag Optimize?   | Yes   |       | Yes   | Yes   |       |       |       |
| Recall Mode          | None  | C-Max | C-Max | C-Max | Max   | Max   | Max   |

### Intersection Summary

Cycle Length: 89.5

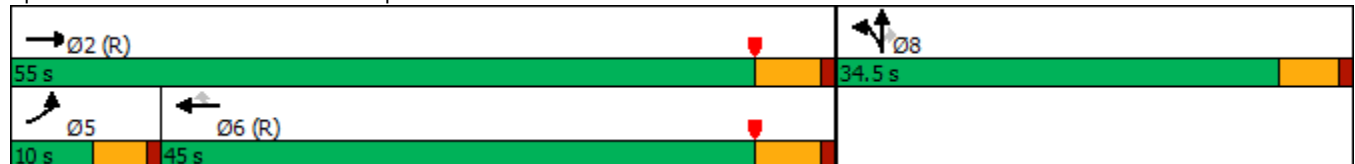
Actuated Cycle Length: 89.5

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 8: I-215 NB Ramps & Alessandro Bl. 05/28/2019

|                                                                      |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |   |                                                                                      |  |  |  |  |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                             | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                  |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)                                               | 252                                                                               | 2613                                                                                                                                                                                                                                                  | 219                                                                               | 0                                                                                 | 1765                                                                                                                                                                                                                                                  | 300                                                                               | 751                                                                                 | 68                                                                                                                                                                      | 382                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)                                                | 252                                                                               | 2613                                                                                                                                                                                                                                                  | 219                                                                               | 0                                                                                 | 1765                                                                                                                                                                                                                                                  | 300                                                                               | 751                                                                                 | 68                                                                                                                                                                      | 382                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh                                                  | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)                                                  | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj                                                     | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach                                                |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                     | No                                                                                                                                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                               | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h                                                 | 268                                                                               | 2780                                                                                                                                                                                                                                                  | 233                                                                               | 0                                                                                 | 1878                                                                                                                                                                                                                                                  | 203                                                                               | 902                                                                                 | 0                                                                                                                                                                       | 183                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor                                                     | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                                | 0.94                                                                                                                                                                    | 0.94                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                                                           | 111                                                                               | 2711                                                                                                                                                                                                                                                  | 220                                                                               | 0                                                                                 | 2305                                                                                                                                                                                                                                                  | 701                                                                               | 1186                                                                                | 0                                                                                                                                                                       | 528                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green                                                      | 0.06                                                                              | 0.56                                                                                                                                                                                                                                                  | 0.56                                                                              | 0.00                                                                              | 0.44                                                                                                                                                                                                                                                  | 0.44                                                                              | 0.33                                                                                | 0.00                                                                                                                                                                    | 0.33                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h                                                      | 1810                                                                              | 4879                                                                                                                                                                                                                                                  | 396                                                                               | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1577                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h                                                 | 268                                                                               | 1945                                                                                                                                                                                                                                                  | 1068                                                                              | 0                                                                                 | 1878                                                                                                                                                                                                                                                  | 203                                                                               | 902                                                                                 | 0                                                                                                                                                                       | 183                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln                                             | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1818                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1577                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s                                                      | 5.5                                                                               | 50.0                                                                                                                                                                                                                                                  | 50.0                                                                              | 0.0                                                                               | 28.4                                                                                                                                                                                                                                                  | 7.4                                                                               | 20.1                                                                                | 0.0                                                                                                                                                                     | 7.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s                                                | 5.5                                                                               | 50.0                                                                                                                                                                                                                                                  | 50.0                                                                              | 0.0                                                                               | 28.4                                                                                                                                                                                                                                                  | 7.4                                                                               | 20.1                                                                                | 0.0                                                                                                                                                                     | 7.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                                                         | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.22                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h                                               | 111                                                                               | 1921                                                                                                                                                                                                                                                  | 1010                                                                              | 0                                                                                 | 2305                                                                                                                                                                                                                                                  | 701                                                                               | 1186                                                                                | 0                                                                                                                                                                       | 528                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                                                         | 2.42                                                                              | 1.01                                                                                                                                                                                                                                                  | 1.06                                                                              | 0.00                                                                              | 0.81                                                                                                                                                                                                                                                  | 0.29                                                                              | 0.76                                                                                | 0.00                                                                                                                                                                    | 0.35                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h                                                | 111                                                                               | 1921                                                                                                                                                                                                                                                  | 1010                                                                              | 0                                                                                 | 2305                                                                                                                                                                                                                                                  | 701                                                                               | 1186                                                                                | 0                                                                                                                                                                       | 528                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio                                                    | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)                                                   | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                  | 0.09                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh                                             | 42.3                                                                              | 20.0                                                                                                                                                                                                                                                  | 20.0                                                                              | 0.0                                                                               | 21.8                                                                                                                                                                                                                                                  | 15.9                                                                              | 27.1                                                                                | 0.0                                                                                                                                                                     | 22.9                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh                                               | 643.1                                                                             | 9.5                                                                                                                                                                                                                                                   | 28.8                                                                              | 0.0                                                                               | 3.3                                                                                                                                                                                                                                                   | 1.0                                                                               | 4.6                                                                                 | 0.0                                                                                                                                                                     | 1.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh                                            | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln                                             | 22.0                                                                              | 17.9                                                                                                                                                                                                                                                  | 24.2                                                                              | 0.0                                                                               | 10.4                                                                                                                                                                                                                                                  | 2.5                                                                               | 8.7                                                                                 | 0.0                                                                                                                                                                     | 3.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh                                         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                 | 685.3                                                                             | 29.5                                                                                                                                                                                                                                                  | 48.8                                                                              | 0.0                                                                               | 25.1                                                                                                                                                                                                                                                  | 17.0                                                                              | 31.7                                                                                | 0.0                                                                                                                                                                     | 24.7                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                                                            | F                                                                                 | F                                                                                                                                                                                                                                                     | F                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | B                                                                                 | C                                                                                   | A                                                                                                                                                                       | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h                                                  |                                                                                   | 3281                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 2081                                                                                                                                                                                                                                                  |                                                                                   |                                                                                     | 1085                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                |                                                                                   | 89.4                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 24.3                                                                                                                                                                                                                                                  |                                                                                   |                                                                                     | 30.5                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                         |                                                                                   | F                                                                                                                                                                                                                                                     |                                                                                   |                                                                                   | C                                                                                                                                                                                                                                                     |                                                                                   |                                                                                     | C                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                 |                                                                                   | 2                                                                                                                                                                                                                                                     |                                                                                   |                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 |                                                                                     | 8                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                             |                                                                                   | 55.5                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 10.0                                                                                                                                                                                                                                                  | 45.5                                                                              |                                                                                     | 34.5                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                              |                                                                                   | 5.5                                                                                                                                                                                                                                                   |                                                                                   |                                                                                   | 4.5                                                                                                                                                                                                                                                   | 5.5                                                                               |                                                                                     | 5.0                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                          |                                                                                   | 49.5                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 5.5                                                                                                                                                                                                                                                   | 39.5                                                                              |                                                                                     | 29.5                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                         |                                                                                   | 52.0                                                                                                                                                                                                                                                  |                                                                                   |                                                                                   | 7.5                                                                                                                                                                                                                                                   | 30.4                                                                              |                                                                                     | 22.1                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                              |                                                                                   | 0.0                                                                                                                                                                                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                                                                                                                                                                                   | 7.1                                                                               |                                                                                     | 2.6                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                          |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                   |                                                                                   |                                                                                                                                                                                                                                                       | 58.5                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                          |                                                                                   |                                                                                                                                                                                                                                                       | E                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved volume balancing among the lanes for turning movement. |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## **APPENDIX 7.2:**

### **HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS**

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Intersection

Int Delay, s/veh 1.5

| Movement                 | WBL                                                                               | WBR  | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |  |      |  |      |      |  |
| Traffic Vol, veh/h       | 6                                                                                 | 0    | 2                                                                                 | 19   | 0    | 7                                                                                 |
| Future Vol, veh/h        | 6                                                                                 | 0    | 2                                                                                 | 19   | 0    | 7                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -    | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -    | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92   | 92                                                                                | 92   | 92   | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Mvmt Flow                | 7                                                                                 | 0    | 2                                                                                 | 21   | 0    | 8                                                                                 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 21     | 13     | 0      |
| Stage 1              | 13     | -      | -      |
| Stage 2              | 8      | -      | -      |
| Critical Hdwy        | 6.4    | 6.2    | -      |
| Critical Hdwy Stg 1  | 5.4    | -      | -      |
| Critical Hdwy Stg 2  | 5.4    | -      | -      |
| Follow-up Hdwy       | 3.5    | 3.3    | -      |
| Pot Cap-1 Maneuver   | 1001   | 1073   | -      |
| Stage 1              | 1015   | -      | -      |
| Stage 2              | 1020   | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | 1001   | 1073   | -      |
| Mov Cap-2 Maneuver   | 1001   | -      | -      |
| Stage 1              | 1015   | -      | -      |
| Stage 2              | 1020   | -      | -      |

| Approach             | WB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 8.6 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBL   | SBT  |
|-----------------------|-----|----------|-------|------|
| Capacity (veh/h)      | -   | -        | 1001  | 1605 |
| HCM Lane V/C Ratio    | -   | -        | 0.007 | -    |
| HCM Control Delay (s) | -   | -        | 8.6   | 0    |
| HCM Lane LOS          | -   | -        | A     | A    |
| HCM 95th %tile Q(veh) | -   | -        | 0     | 0    |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/29/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 6                                                                                 | 1813                                                                              | 47                                                                                | 3378                                                                              | 23                                                                                | 76                                                                                | 0                                                                                   | 69                                                                                  | 12                                                                                  | 0                                                                                   | 4                                                                                   |
| Future Volume (vph)  | 6                                                                                 | 1813                                                                              | 47                                                                                | 3378                                                                              | 23                                                                                | 76                                                                                | 0                                                                                   | 69                                                                                  | 12                                                                                  | 0                                                                                   | 4                                                                                   |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 23.5                                                                              | 9.2                                                                               | 23.5                                                                              | 23.5                                                                              | 31.6                                                                              | 31.6                                                                                | 31.6                                                                                | 14.6                                                                                | 14.6                                                                                | 14.6                                                                                |
| Total Split (s)      | 11.0                                                                              | 70.0                                                                              | 11.0                                                                              | 70.0                                                                              | 70.0                                                                              | 39.0                                                                              | 39.0                                                                                | 39.0                                                                                | 39.0                                                                                | 39.0                                                                                | 39.0                                                                                |
| Total Split (%)      | 9.2%                                                                              | 58.3%                                                                             | 9.2%                                                                              | 58.3%                                                                             | 58.3%                                                                             | 32.5%                                                                             | 32.5%                                                                               | 32.5%                                                                               | 32.5%                                                                               | 32.5%                                                                               | 32.5%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | None                                                                                | None                                                                                | None                                                                                | None                                                                                | None                                                                                |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.

|                                                                                     |                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø4                                                                                    |
| 11 s                                                                                | 70 s                                                                                | 39 s                                                                                  |
|  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              | Ø8                                                                                    |
| 11 s                                                                                | 70 s                                                                                | 39 s                                                                                  |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 2: Barton St. & Alessandro Bl. 05/29/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 6                                                                                 | 1813                                                                                                                                                                                                                                                  | 18                                                                                | 47                                                                                | 3378                                                                                                                                                                                                                                                  | 23                                                                                | 76                                                                                 | 0                                                                                   | 69                                                                                  | 12                                                                                  | 0                                                                                   | 4                                                                                   |
| Future Volume (veh/h)        | 6                                                                                 | 1813                                                                                                                                                                                                                                                  | 18                                                                                | 47                                                                                | 3378                                                                                                                                                                                                                                                  | 23                                                                                | 76                                                                                 | 0                                                                                   | 69                                                                                  | 12                                                                                  | 0                                                                                   | 4                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.99                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 6                                                                                 | 1949                                                                                                                                                                                                                                                  | 19                                                                                | 51                                                                                | 3632                                                                                                                                                                                                                                                  | 25                                                                                | 82                                                                                 | 0                                                                                   | 43                                                                                  | 13                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.93                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.93                                                                               | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                | 0.93                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 14                                                                                | 3097                                                                                                                                                                                                                                                  | 30                                                                                | 66                                                                                | 3297                                                                                                                                                                                                                                                  | 931                                                                               | 61                                                                                 | 0                                                                                   | 455                                                                                 | 61                                                                                  | 0                                                                                   | 461                                                                                 |
| Arrive On Green              | 0.01                                                                              | 0.55                                                                                                                                                                                                                                                  | 0.55                                                                              | 0.05                                                                              | 0.77                                                                                                                                                                                                                                                  | 0.77                                                                              | 0.29                                                                               | 0.00                                                                                | 0.29                                                                                | 0.29                                                                                | 0.00                                                                                | 0.29                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5635                                                                                                                                                                                                                                                  | 55                                                                                | 1810                                                                              | 5700                                                                                                                                                                                                                                                  | 1610                                                                              | 3                                                                                  | 0                                                                                   | 1590                                                                                | 3                                                                                   | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 6                                                                                 | 1314                                                                                                                                                                                                                                                  | 654                                                                               | 51                                                                                | 3632                                                                                                                                                                                                                                                  | 25                                                                                | 82                                                                                 | 0                                                                                   | 43                                                                                  | 13                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                                                                                                                                                                                                  | 1890                                                                              | 1810                                                                              | 1900                                                                                                                                                                                                                                                  | 1610                                                                              | 3                                                                                  | 0                                                                                   | 1590                                                                                | 3                                                                                   | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.4                                                                               | 28.6                                                                                                                                                                                                                                                  | 28.6                                                                              | 3.3                                                                               | 69.4                                                                                                                                                                                                                                                  | 0.4                                                                               | 0.1                                                                                | 0.0                                                                                 | 2.4                                                                                 | 0.1                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.4                                                                               | 28.6                                                                                                                                                                                                                                                  | 28.6                                                                              | 3.3                                                                               | 69.4                                                                                                                                                                                                                                                  | 0.4                                                                               | 34.4                                                                               | 0.0                                                                                 | 2.4                                                                                 | 34.4                                                                                | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.03                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 14                                                                                | 2088                                                                                                                                                                                                                                                  | 1039                                                                              | 66                                                                                | 3297                                                                                                                                                                                                                                                  | 931                                                                               | 61                                                                                 | 0                                                                                   | 455                                                                                 | 61                                                                                  | 0                                                                                   | 461                                                                                 |
| V/C Ratio(X)                 | 0.44                                                                              | 0.63                                                                                                                                                                                                                                                  | 0.63                                                                              | 0.77                                                                              | 1.10                                                                                                                                                                                                                                                  | 0.03                                                                              | 1.35                                                                               | 0.00                                                                                | 0.09                                                                                | 0.21                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 103                                                                               | 2088                                                                                                                                                                                                                                                  | 1039                                                                              | 103                                                                               | 3297                                                                                                                                                                                                                                                  | 931                                                                               | 61                                                                                 | 0                                                                                   | 456                                                                                 | 61                                                                                  | 0                                                                                   | 462                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.33                                                                              | 1.33                                                                                                                                                                                                                                                  | 1.33                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.56                                                                              | 0.56                                                                                                                                                                                                                                                  | 0.56                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.3                                                                              | 18.6                                                                                                                                                                                                                                                  | 18.6                                                                              | 56.6                                                                              | 13.8                                                                                                                                                                                                                                                  | 5.9                                                                               | 60.0                                                                               | 0.0                                                                                 | 31.4                                                                                | 60.0                                                                                | 0.0                                                                                 | 30.6                                                                                |
| Incr Delay (d2), s/veh       | 8.0                                                                               | 1.4                                                                                                                                                                                                                                                   | 2.9                                                                               | 4.0                                                                               | 48.8                                                                                                                                                                                                                                                  | 0.0                                                                               | 233.3                                                                              | 0.0                                                                                 | 0.1                                                                                 | 1.7                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 11.5                                                                                                                                                                                                                                                  | 11.9                                                                              | 1.5                                                                               | 26.2                                                                                                                                                                                                                                                  | 0.1                                                                               | 5.8                                                                                | 0.0                                                                                 | 0.9                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 67.3                                                                              | 20.1                                                                                                                                                                                                                                                  | 21.5                                                                              | 60.6                                                                              | 62.7                                                                                                                                                                                                                                                  | 5.9                                                                               | 293.3                                                                              | 0.0                                                                                 | 31.5                                                                                | 61.7                                                                                | 0.0                                                                                 | 30.6                                                                                |
| LnGrp LOS                    | E                                                                                 | C                                                                                                                                                                                                                                                     | C                                                                                 | E                                                                                 | F                                                                                                                                                                                                                                                     | A                                                                                 | F                                                                                  | A                                                                                   | C                                                                                   | E                                                                                   | A                                                                                   | C                                                                                   |
| Approach Vol, veh/h          | 1974                                                                              |                                                                                                                                                                                                                                                       | 3708                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 125                                                                                |                                                                                     | 14                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 20.7                                                                              |                                                                                                                                                                                                                                                       | 62.2                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 203.3                                                                              |                                                                                     | 59.5                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | C                                                                                 |                                                                                                                                                                                                                                                       | E                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | F                                                                                  |                                                                                     | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 4                                                                                 |                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 8                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 8.6                                                                               | 72.4                                                                                                                                                                                                                                                  | 39.0                                                                              |                                                                                   | 5.1                                                                                                                                                                                                                                                   | 75.9                                                                              | 39.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             | 6.5                                                                                                                                                                                                                                                   | 4.6                                                                               |                                                                                   | * 4.2                                                                                                                                                                                                                                                 | 6.5                                                                               | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 6.8                                                                             | 63.5                                                                                                                                                                                                                                                  | 34.4                                                                              |                                                                                   | * 6.8                                                                                                                                                                                                                                                 | 63.5                                                                              | 34.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.3                                                                               | 30.6                                                                                                                                                                                                                                                  | 36.4                                                                              |                                                                                   | 2.4                                                                                                                                                                                                                                                   | 71.4                                                                              | 36.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 22.4                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 51.2                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | D                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/29/2019

|                      |  |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBL                                                                               | NBT                                                                               | Ø6   |
| Lane Configurations  |  |  |  |  |                                                                                   |  |      |
| Traffic Volume (vph) | 6                                                                                 | 1882                                                                              | 2                                                                                 | 3448                                                                              | 4                                                                                 | 0                                                                                 |      |
| Future Volume (vph)  | 6                                                                                 | 1882                                                                              | 2                                                                                 | 3448                                                                              | 4                                                                                 | 0                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                |      |
| Protected Phases     | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |                                                                                   | 2                                                                                 | 6    |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |      |
| Detector Phase       | 7                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 | 2                                                                                 | 2                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.2                                                                               | 23.5                                                                              | 9.2                                                                               | 23.5                                                                              | 14.6                                                                              | 14.6                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 95.0                                                                              | 10.0                                                                              | 95.0                                                                              | 15.0                                                                              | 15.0                                                                              | 15.0 |
| Total Split (%)      | 8.3%                                                                              | 79.2%                                                                             | 8.3%                                                                              | 79.2%                                                                             | 12.5%                                                                             | 12.5%                                                                             | 13%  |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                               |      |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                   |      |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                   |      |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | None                                                                              | None                                                                              | None |

Intersection Summary

Cycle Length: 120

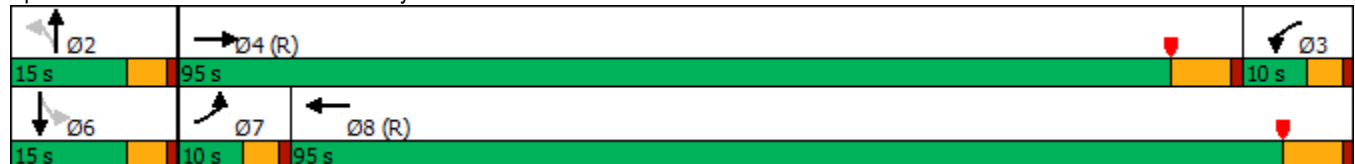
Actuated Cycle Length: 120

Offset: 81 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/29/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 6                                                                                 | 1882                                                                              | 6                                                                                 | 2                                                                                 | 3448                                                                              | 0                                                                                 | 4                                                                                  | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 6                                                                                 | 1882                                                                              | 6                                                                                 | 2                                                                                 | 3448                                                                              | 0                                                                                 | 4                                                                                  | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 7                                                                                 | 2046                                                                              | 7                                                                                 | 2                                                                                 | 3748                                                                              | 0                                                                                 | 4                                                                                  | 0                                                                                   | 1                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 16                                                                                | 3936                                                                              | 13                                                                                | 186                                                                               | 4414                                                                              | 0                                                                                 | 69                                                                                 | 0                                                                                   | 4                                                                                   | 0                                                                                   | 24                                                                                  | 0                                                                                   |
| Arrive On Green              | 0.02                                                                              | 1.00                                                                              | 1.00                                                                              | 0.10                                                                              | 0.85                                                                              | 0.00                                                                              | 0.01                                                                               | 0.00                                                                                | 0.01                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5336                                                                              | 18                                                                                | 1810                                                                              | 5358                                                                              | 0                                                                                 | 1177                                                                               | 0                                                                                   | 294                                                                                 | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Grp Volume(v), veh/h         | 7                                                                                 | 1326                                                                              | 727                                                                               | 2                                                                                 | 3748                                                                              | 0                                                                                 | 5                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1897                                                                              | 1810                                                                              | 1729                                                                              | 0                                                                                 | 1471                                                                               | 0                                                                                   | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 46.6                                                                              | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 46.6                                                                              | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              | 0.80                                                                               |                                                                                     | 0.20                                                                                | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 16                                                                                | 2550                                                                              | 1399                                                                              | 186                                                                               | 4414                                                                              | 0                                                                                 | 73                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 24                                                                                  | 0                                                                                   |
| V/C Ratio(X)                 | 0.45                                                                              | 0.52                                                                              | 0.52                                                                              | 0.01                                                                              | 0.85                                                                              | 0.00                                                                              | 0.07                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 87                                                                                | 2550                                                                              | 1399                                                                              | 186                                                                               | 4414                                                                              | 0                                                                                 | 181                                                                                | 0                                                                                   | 0                                                                                   | 0                                                                                   | 165                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.87                                                                              | 0.87                                                                              | 0.87                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.7                                                                              | 0.0                                                                               | 0.0                                                                               | 48.3                                                                              | 4.8                                                                               | 0.0                                                                               | 58.7                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 6.3                                                                               | 0.7                                                                               | 1.2                                                                               | 0.0                                                                               | 2.2                                                                               | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 0.2                                                                               | 0.5                                                                               | 0.1                                                                               | 5.2                                                                               | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 65.0                                                                              | 0.7                                                                               | 1.2                                                                               | 48.3                                                                              | 7.0                                                                               | 0.0                                                                               | 59.1                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                  | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 2060                                                                              |                                                                                   |                                                                                   | 3750                                                                              |                                                                                   |                                                                                   |                                                                                    | 5                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 1.1                                                                               |                                                                                   |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   |                                                                                    | 59.1                                                                                |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 6.1                                                                               |                                                                                   | 18.9                                                                              | 95.0                                                                              |                                                                                   | 6.1                                                                               |                                                                                    | 5.2                                                                                 | 108.6                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 6.5                                                                               | * 6.5                                                                             |                                                                                   | 4.6                                                                               |                                                                                    | * 4.2                                                                               | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                   | 5.8                                                                               | * 89                                                                              |                                                                                   | 10.4                                                                              |                                                                                    | * 5.8                                                                               | 88.5                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.4                                                                               |                                                                                   | 2.1                                                                               | 2.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    | 2.5                                                                                 | 48.6                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 41.1                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 39.6                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

| Intersection               |                |                        |          |        |                            |       |          |      |                                |            |      |      |
|----------------------------|----------------|------------------------|----------|--------|----------------------------|-------|----------|------|--------------------------------|------------|------|------|
| Int Delay, s/veh           | 24.2           |                        |          |        |                            |       |          |      |                                |            |      |      |
| Movement                   | EBL            | EBT                    | EBR      | WBL    | WBT                        | WBR   | NBL      | NBT  | NBR                            | SBL        | SBT  | SBR  |
| Lane Configurations        | ↱ ↑↑↑          |                        |          | ↱ ↑↑↑  |                            |       | ↱        | ↱    |                                | ↱          | ↱    |      |
| Traffic Vol, veh/h         | 4              | 1882                   | 8        | 14     | 3449                       | 35    | 4        | 0    | 17                             | 11         | 0    | 1    |
| Future Vol, veh/h          | 4              | 1882                   | 8        | 14     | 3449                       | 35    | 4        | 0    | 17                             | 11         | 0    | 1    |
| Conflicting Peds, #/hr     | 0              | 0                      | 0        | 0      | 0                          | 0     | 0        | 0    | 0                              | 0          | 0    | 0    |
| Sign Control               | Free           | Free                   | Free     | Free   | Free                       | Free  | Stop     | Stop | Stop                           | Stop       | Stop | Stop |
| RT Channelized             | -              | -                      | None     | -      | -                          | None  | -        | -    | None                           | -          | -    | None |
| Storage Length             | 155            | -                      | -        | 155    | -                          | -     | 0        | -    | -                              | 0          | -    | -    |
| Veh in Median Storage, #   | -              | 0                      | -        | -      | 0                          | -     | -        | 0    | -                              | -          | 0    | -    |
| Grade, %                   | -              | 0                      | -        | -      | 0                          | -     | -        | 0    | -                              | -          | 0    | -    |
| Peak Hour Factor           | 92             | 92                     | 92       | 92     | 92                         | 92    | 92       | 92   | 92                             | 92         | 92   | 92   |
| Heavy Vehicles, %          | 0              | 0                      | 0        | 0      | 0                          | 0     | 0        | 0    | 0                              | 0          | 0    | 0    |
| Mvmt Flow                  | 4              | 2046                   | 9        | 15     | 3749                       | 38    | 4        | 0    | 18                             | 12         | 0    | 1    |
|                            |                |                        |          |        |                            |       |          |      |                                |            |      |      |
| Major/Minor                | Major1         |                        |          | Major2 |                            |       | Minor1   |      |                                | Minor2     |      |      |
| Conflicting Flow All       | 3787           | 0                      | 0        | 2055   | 0                          | 0     | 3589     | 5876 | 1028                           | 4624       | 5861 | 1894 |
| Stage 1                    | -              | -                      | -        | -      | -                          | -     | 2059     | 2059 | -                              | 3798       | 3798 | -    |
| Stage 2                    | -              | -                      | -        | -      | -                          | -     | 1530     | 3817 | -                              | 826        | 2063 | -    |
| Critical Hdwy              | 5.3            | -                      | -        | 5.3    | -                          | -     | 6.4      | 6.5  | 7.1                            | 6.4        | 6.5  | 7.1  |
| Critical Hdwy Stg 1        | -              | -                      | -        | -      | -                          | -     | 7.3      | 5.5  | -                              | 7.3        | 5.5  | -    |
| Critical Hdwy Stg 2        | -              | -                      | -        | -      | -                          | -     | 6.7      | 5.5  | -                              | 6.7        | 5.5  | -    |
| Follow-up Hdwy             | 3.1            | -                      | -        | 3.1    | -                          | -     | 3.8      | 4    | 3.9                            | 3.8        | 4    | 3.9  |
| Pot Cap-1 Maneuver         | 15             | -                      | -        | 120    | -                          | -     | 6        | 0    | 202                            | ~ 1        | 0    | 52   |
| Stage 1                    | -              | -                      | -        | -      | -                          | -     | 36       | 99   | -                              | ~ 2        | 12   | -    |
| Stage 2                    | -              | -                      | -        | -      | -                          | -     | 111      | 11   | -                              | 305        | 98   | -    |
| Platoon blocked, %         |                | -                      | -        |        | -                          | -     |          |      |                                |            |      |      |
| Mov Cap-1 Maneuver         | 15             | -                      | -        | 120    | -                          | -     | ~ 4      | 0    | 202                            | ~ 1        | 0    | 52   |
| Mov Cap-2 Maneuver         | -              | -                      | -        | -      | -                          | -     | ~ 4      | 0    | -                              | ~ 1        | 0    | -    |
| Stage 1                    | -              | -                      | -        | -      | -                          | -     | 26       | 73   | -                              | ~ 1        | 11   | -    |
| Stage 2                    | -              | -                      | -        | -      | -                          | -     | 95       | 10   | -                              | 203        | 72   | -    |
|                            |                |                        |          |        |                            |       |          |      |                                |            |      |      |
| Approach                   | EB             |                        |          | WB     |                            |       | NB       |      |                                | SB         |      |      |
| HCM Control Delay, s       | 0.7            |                        |          | 0.2    |                            |       | \$ 322.4 |      |                                | \$ 10194.8 |      |      |
| HCM LOS                    |                |                        |          |        |                            |       | F        |      |                                | F          |      |      |
|                            |                |                        |          |        |                            |       |          |      |                                |            |      |      |
| Minor Lane/Major Mvmt      | NBLn1 NBLn2    |                        | EBL      | EBT    | EBR                        | WBL   | WBT      | WBR  | SBLn1                          | SBLn2      |      |      |
| Capacity (veh/h)           | 4 202          |                        | 15       | -      | -                          | 120   | -        | -    | 1                              | 52         |      |      |
| HCM Lane V/C Ratio         | 1.087 0.091    |                        | 0.29     | -      | -                          | 0.127 | -        | -    | 11.957                         | 0.021      |      |      |
| HCM Control Delay (s)      | \$ 1588.3 24.6 |                        | \$ 323.6 | -      | -                          | 39.3  | -        | -    | \$ 11114.7                     | 75.7       |      |      |
| HCM Lane LOS               | F C            |                        | F        | -      | -                          | E     | -        | -    | F                              | F          |      |      |
| HCM 95th %tile Q(veh)      | 1.3 0.3        |                        | 0.8      | -      | -                          | 0.4   | -        | -    | 2.9                            | 0.1        |      |      |
| Notes                      |                |                        |          |        |                            |       |          |      |                                |            |      |      |
| ~: Volume exceeds capacity |                | \$: Delay exceeds 300s |          |        | +: Computation Not Defined |       |          |      | *: All major volume in platoon |            |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 5: Alessandro Bl. & San Gorgonio Dr.

05/29/2019



| Lane Group           | EBL  | EBT   | WBL   | WBT   | WBR   | NBL  | NBR   | SBL  | SBR   |
|----------------------|------|-------|-------|-------|-------|------|-------|------|-------|
| Lane Configurations  |      |       |       |       |       |      |       |      |       |
| Traffic Volume (vph) | 13   | 1885  | 175   | 3812  | 46    | 13   | 68    | 25   | 16    |
| Future Volume (vph)  | 13   | 1885  | 175   | 3812  | 46    | 13   | 68    | 25   | 16    |
| Turn Type            | Prot | NA    | Prot  | NA    | Perm  | Prot | Perm  | Prot | Perm  |
| Protected Phases     | 5    | 2     | 1     | 6     |       | 3    |       | 7    |       |
| Permitted Phases     |      |       |       |       | 6     |      | 8     |      | 4     |
| Detector Phase       | 5    | 2     | 1     | 6     | 6     | 3    | 8     | 7    | 4     |
| Switch Phase         |      |       |       |       |       |      |       |      |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0   | 10.0  | 10.0  | 5.0  | 10.0  | 5.0  | 10.0  |
| Minimum Split (s)    | 9.6  | 16.5  | 9.6   | 30.5  | 30.5  | 9.6  | 26.6  | 9.6  | 14.6  |
| Total Split (s)      | 9.6  | 63.2  | 20.4  | 74.0  | 74.0  | 9.6  | 26.8  | 9.6  | 26.8  |
| Total Split (%)      | 8.0% | 52.7% | 17.0% | 61.7% | 61.7% | 8.0% | 22.3% | 8.0% | 22.3% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6   | 5.5   | 5.5   | 3.6  | 3.6   | 3.6  | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0  | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   |
| Total Lost Time (s)  | 4.6  | 6.5   | 4.6   | 6.5   | 6.5   | 4.6  | 4.6   | 4.6  | 4.6   |
| Lead/Lag             | Lead | Lag   | Lead  | Lag   | Lag   | Lead | Lag   | Lead | Lag   |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes   | Yes   | Yes   | Yes  | Yes   | Yes  | Yes   |
| Recall Mode          | None | C-Max | None  | None  | None  | None | None  | None | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 77.1 (64%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 5: Alessandro Bl. & San Gorgonio Dr.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 5: Alessandro Bl. & San Gorgonio Dr. 05/29/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 13                                                                                | 1885                                                                              | 35                                                                                | 175                                                                               | 3812                                                                              | 46                                                                                | 13                                                                                  | 0                                                                                   | 68                                                                                  | 25                                                                                  | 0                                                                                   | 16                                                                                  |
| Future Volume (veh/h)        | 13                                                                                | 1885                                                                              | 35                                                                                | 175                                                                               | 3812                                                                              | 46                                                                                | 13                                                                                  | 0                                                                                   | 68                                                                                  | 25                                                                                  | 0                                                                                   | 16                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 14                                                                                | 2049                                                                              | 38                                                                                | 190                                                                               | 4143                                                                              | 47                                                                                | 14                                                                                  | 0                                                                                   | 74                                                                                  | 27                                                                                  | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 28                                                                                | 3143                                                                              | 58                                                                                | 217                                                                               | 3650                                                                              | 1132                                                                              | 28                                                                                  | 153                                                                                 | 130                                                                                 | 56                                                                                  | 183                                                                                 |                                                                                     |
| Arrive On Green              | 0.02                                                                              | 0.60                                                                              | 0.60                                                                              | 0.16                                                                              | 0.94                                                                              | 0.94                                                                              | 0.02                                                                                | 0.00                                                                                | 0.08                                                                                | 0.03                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5243                                                                              | 97                                                                                | 1810                                                                              | 5187                                                                              | 1609                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |
| Grp Volume(v), veh/h         | 14                                                                                | 1351                                                                              | 736                                                                               | 190                                                                               | 4143                                                                              | 47                                                                                | 14                                                                                  | 0                                                                                   | 74                                                                                  | 27                                                                                  | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1883                                                                              | 1810                                                                              | 1729                                                                              | 1609                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                | 1610                                                                                |
| Q Serve(g_s), s              | 0.9                                                                               | 30.8                                                                              | 30.9                                                                              | 12.3                                                                              | 84.4                                                                              | 0.2                                                                               | 0.9                                                                                 | 0.0                                                                                 | 5.3                                                                                 | 1.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.9                                                                               | 30.8                                                                              | 30.9                                                                              | 12.3                                                                              | 84.4                                                                              | 0.2                                                                               | 0.9                                                                                 | 0.0                                                                                 | 5.3                                                                                 | 1.8                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.05                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 28                                                                                | 2073                                                                              | 1129                                                                              | 217                                                                               | 3650                                                                              | 1132                                                                              | 28                                                                                  | 153                                                                                 | 130                                                                                 | 56                                                                                  | 183                                                                                 |                                                                                     |
| V/C Ratio(X)                 | 0.50                                                                              | 0.65                                                                              | 0.65                                                                              | 0.88                                                                              | 1.14                                                                              | 0.04                                                                              | 0.50                                                                                | 0.00                                                                                | 0.57                                                                                | 0.48                                                                                | 0.00                                                                                |                                                                                     |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2073                                                                              | 1129                                                                              | 238                                                                               | 3650                                                                              | 1132                                                                              | 75                                                                                  | 352                                                                                 | 298                                                                                 | 75                                                                                  | 352                                                                                 |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.33                                                                              | 1.33                                                                              | 1.33                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.09                                                                              | 0.09                                                                              | 0.09                                                                              | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.6                                                                              | 15.8                                                                              | 15.8                                                                              | 49.6                                                                              | 3.9                                                                               | 1.1                                                                               | 58.6                                                                                | 0.0                                                                                 | 53.2                                                                                | 57.2                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 5.0                                                                               | 1.6                                                                               | 2.9                                                                               | 3.4                                                                               | 61.2                                                                              | 0.0                                                                               | 13.0                                                                                | 0.0                                                                                 | 3.9                                                                                 | 6.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.4                                                                               | 10.8                                                                              | 12.2                                                                              | 5.3                                                                               | 22.5                                                                              | 0.1                                                                               | 0.5                                                                                 | 0.0                                                                                 | 0.1                                                                                 | 0.9                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 63.6                                                                              | 17.4                                                                              | 18.8                                                                              | 53.0                                                                              | 65.1                                                                              | 1.2                                                                               | 71.6                                                                                | 0.0                                                                                 | 57.0                                                                                | 63.4                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | B                                                                                 | B                                                                                 | D                                                                                 | F                                                                                 | A                                                                                 | E                                                                                   | A                                                                                   | E                                                                                   | E                                                                                   | A                                                                                   |                                                                                     |
| Approach Vol, veh/h          | 2101                                                                              |                                                                                   |                                                                                   |                                                                                   | 4380                                                                              |                                                                                   | 88                                                                                  |                                                                                     |                                                                                     |                                                                                     | 27                                                                                  | A                                                                                   |
| Approach Delay, s/veh        | 18.2                                                                              |                                                                                   |                                                                                   |                                                                                   | 63.9                                                                              |                                                                                   | 59.4                                                                                |                                                                                     |                                                                                     |                                                                                     | 63.4                                                                                |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   | E                                                                                 |                                                                                   | E                                                                                   |                                                                                     |                                                                                     |                                                                                     | E                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 19.0                                                                              | 78.4                                                                              | 6.5                                                                               | 16.1                                                                              | 6.5                                                                               | 90.9                                                                              | 8.3                                                                                 | 14.3                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               | 6.5                                                                               | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 6.5                                                                               | 4.6                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 15.8                                                                              | 56.7                                                                              | 5.0                                                                               | 22.2                                                                              | 5.0                                                                               | 67.5                                                                              | 5.0                                                                                 | 22.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 14.3                                                                              | 32.9                                                                              | 2.9                                                                               | 0.0                                                                               | 2.9                                                                               | 86.4                                                                              | 3.8                                                                                 | 7.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.1                                                                               | 18.6                                                                              | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 49.2                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/29/2019

|                      |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |   |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |  |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                                | NBL                                                                                                                                                                     | NBT                                                                                                                                                                     | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations  |  |    |  |   |    |  |   |   |   |   |   |  |
| Traffic Volume (vph) | 256                                                                               | 1725                                                                                                                                                                                                                                                  | 367                                                                               | 315                                                                                                                                                                 | 3035                                                                                                                                                                                                                                                  | 607                                                                                | 673                                                                                                                                                                     | 859                                                                                                                                                                     | 111                                                                                                                                                                     | 174                                                                                                                                                                     | 175                                                                                                                                                                     | 258                                                                                 |
| Future Volume (vph)  | 256                                                                               | 1725                                                                                                                                                                                                                                                  | 367                                                                               | 315                                                                                                                                                                 | 3035                                                                                                                                                                                                                                                  | 607                                                                                | 673                                                                                                                                                                     | 859                                                                                                                                                                     | 111                                                                                                                                                                     | 174                                                                                                                                                                     | 175                                                                                                                                                                     | 258                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Prot                                                                                                                                                                | NA                                                                                                                                                                                                                                                    | Perm                                                                               | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | pm+ov                                                                                                                                                                   | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     |                                                                                    | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       | 2                                                                                 |                                                                                                                                                                     |                                                                                                                                                                                                                                                       | 6                                                                                  |                                                                                                                                                                         |                                                                                                                                                                         | 8                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 2                                                                                 | 1                                                                                                                                                                   | 6                                                                                                                                                                                                                                                     | 6                                                                                  | 3                                                                                                                                                                       | 8                                                                                                                                                                       | 1                                                                                                                                                                       | 7                                                                                                                                                                       | 4                                                                                                                                                                       | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                              | 5.0                                                                                                                                                                 | 10.0                                                                                                                                                                                                                                                  | 10.0                                                                               | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 5.0                                                                                                                                                                     | 5.0                                                                                                                                                                     | 10.0                                                                                                                                                                    | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                              | 8.7                                                                                                                                                                 | 43.5                                                                                                                                                                                                                                                  | 43.5                                                                               | 8.7                                                                                                                                                                     | 15.8                                                                                                                                                                    | 8.7                                                                                                                                                                     | 8.7                                                                                                                                                                     | 49.8                                                                                                                                                                    | 49.8                                                                                |
| Total Split (s)      | 10.0                                                                              | 45.4                                                                                                                                                                                                                                                  | 45.4                                                                              | 11.0                                                                                                                                                                | 46.4                                                                                                                                                                                                                                                  | 46.4                                                                               | 13.0                                                                                                                                                                    | 50.6                                                                                                                                                                    | 11.0                                                                                                                                                                    | 13.0                                                                                                                                                                    | 50.6                                                                                                                                                                    | 50.6                                                                                |
| Total Split (%)      | 8.3%                                                                              | 37.8%                                                                                                                                                                                                                                                 | 37.8%                                                                             | 9.2%                                                                                                                                                                | 38.7%                                                                                                                                                                                                                                                 | 38.7%                                                                              | 10.8%                                                                                                                                                                   | 42.2%                                                                                                                                                                   | 9.2%                                                                                                                                                                    | 10.8%                                                                                                                                                                   | 42.2%                                                                                                                                                                   | 42.2%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 3.2                                                                                                                                                                 | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 3.2                                                                                                                                                                     | 3.2                                                                                                                                                                     | 4.8                                                                                                                                                                     | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 0.5                                                                                                                                                                 | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 0.5                                                                                                                                                                     | 0.5                                                                                                                                                                     | 1.0                                                                                                                                                                     | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                               | 3.7                                                                                                                                                                 | 6.5                                                                                                                                                                                                                                                   | 6.5                                                                                | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 3.7                                                                                                                                                                     | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                                                                                                                                                                                                   | Lag                                                                               | Lead                                                                                                                                                                | Lag                                                                                                                                                                                                                                                   | Lag                                                                                | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lead                                                                                                                                                                    | Lead                                                                                                                                                                    | Lag                                                                                                                                                                     | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                                                                                                                                                                                                   | Yes                                                                               | Yes                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                   | Yes                                                                                | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                                                                                                     | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | None                                                                                                                                                                | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                              | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                                                                                                    | None                                                                                |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. &amp; Alessandro Bl.

|                                                                                        |                                                                                            |                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø3 |  Ø4 |
| 11 s                                                                                   | 45.4 s                                                                                     | 13 s                                                                                   | 50.6 s                                                                                 |
|  Ø5 |  Ø6 (R) |  Ø7 |  Ø8 |
| 10 s                                                                                   | 46.4 s                                                                                     | 13 s                                                                                   | 50.6 s                                                                                 |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/29/2019

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |  |  |  |  |   |  |  |  |  |  |
| Traffic Volume (veh/h)       | 256                                                                               | 1725                                                                              | 367                                                                               | 315                                                                               | 3035                                                                              | 607                                                                               | 673                                                                                 | 859                                                                                 | 111                                                                                 | 174                                                                                 | 175                                                                                 | 258                                                                                 |
| Future Volume (veh/h)        | 256                                                                               | 1725                                                                              | 367                                                                               | 315                                                                               | 3035                                                                              | 607                                                                               | 673                                                                                 | 859                                                                                 | 111                                                                                 | 174                                                                                 | 175                                                                                 | 258                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 269                                                                               | 1816                                                                              | 386                                                                               | 332                                                                               | 3195                                                                              | 639                                                                               | 708                                                                                 | 904                                                                                 | 117                                                                                 | 183                                                                                 | 184                                                                                 | 272                                                                                 |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 95                                                                                | 2127                                                                              | 660                                                                               | 214                                                                               | 2171                                                                              | 673                                                                               | 272                                                                                 | 1071                                                                                | 1013                                                                                | 239                                                                                 | 1037                                                                                | 463                                                                                 |
| Arrive On Green              | 0.02                                                                              | 0.14                                                                              | 0.14                                                                              | 0.06                                                                              | 0.42                                                                              | 0.42                                                                              | 0.08                                                                                | 0.30                                                                                | 0.30                                                                                | 0.07                                                                                | 0.29                                                                                | 0.29                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                              | 1610                                                                              | 3510                                                                              | 5187                                                                              | 1609                                                                              | 3510                                                                                | 3610                                                                                | 2834                                                                                | 3510                                                                                | 3610                                                                                | 1610                                                                                |
| Grp Volume(v), veh/h         | 269                                                                               | 1816                                                                              | 386                                                                               | 332                                                                               | 3195                                                                              | 639                                                                               | 708                                                                                 | 904                                                                                 | 117                                                                                 | 183                                                                                 | 184                                                                                 | 272                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1610                                                                              | 1755                                                                              | 1729                                                                              | 1609                                                                              | 1755                                                                                | 1805                                                                                | 1417                                                                                | 1755                                                                                | 1805                                                                                | 1610                                                                                |
| Q Serve(g_s), s              | 6.3                                                                               | 41.1                                                                              | 27.0                                                                              | 7.3                                                                               | 50.2                                                                              | 46.0                                                                              | 9.3                                                                                 | 28.2                                                                                | 3.3                                                                                 | 6.2                                                                                 | 4.6                                                                                 | 17.4                                                                                |
| Cycle Q Clear(g_c), s        | 6.3                                                                               | 41.1                                                                              | 27.0                                                                              | 7.3                                                                               | 50.2                                                                              | 46.0                                                                              | 9.3                                                                                 | 28.2                                                                                | 3.3                                                                                 | 6.2                                                                                 | 4.6                                                                                 | 17.4                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 95                                                                                | 2127                                                                              | 660                                                                               | 214                                                                               | 2171                                                                              | 673                                                                               | 272                                                                                 | 1071                                                                                | 1013                                                                                | 239                                                                                 | 1037                                                                                | 463                                                                                 |
| V/C Ratio(X)                 | 2.83                                                                              | 0.85                                                                              | 0.58                                                                              | 1.55                                                                              | 1.47                                                                              | 0.95                                                                              | 2.60                                                                                | 0.84                                                                                | 0.12                                                                                | 0.77                                                                                | 0.18                                                                                | 0.59                                                                                |
| Avail Cap(c_a), veh/h        | 95                                                                                | 2127                                                                              | 660                                                                               | 214                                                                               | 2171                                                                              | 673                                                                               | 272                                                                                 | 1348                                                                                | 1230                                                                                | 272                                                                                 | 1348                                                                                | 601                                                                                 |
| HCM Platoon Ratio            | 0.33                                                                              | 0.33                                                                              | 0.33                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.71                                                                              | 0.71                                                                              | 0.71                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.0                                                                              | 48.4                                                                              | 42.3                                                                              | 56.3                                                                              | 34.9                                                                              | 33.7                                                                              | 55.3                                                                                | 39.6                                                                                | 25.8                                                                                | 55.0                                                                                | 32.1                                                                                | 36.7                                                                                |
| Incr Delay (d2), s/veh       | 844.5                                                                             | 3.3                                                                               | 2.7                                                                               | 271.3                                                                             | 214.9                                                                             | 24.2                                                                              | 731.6                                                                               | 4.1                                                                                 | 0.1                                                                                 | 9.0                                                                                 | 0.1                                                                                 | 1.2                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 25.2                                                                              | 19.6                                                                              | 12.1                                                                              | 11.2                                                                              | 62.9                                                                              | 21.3                                                                              | 31.7                                                                                | 12.6                                                                                | 1.1                                                                                 | 3.0                                                                                 | 2.0                                                                                 | 6.8                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 903.5                                                                             | 51.7                                                                              | 45.0                                                                              | 327.7                                                                             | 249.8                                                                             | 57.9                                                                              | 787.0                                                                               | 43.7                                                                                | 25.9                                                                                | 64.0                                                                                | 32.2                                                                                | 37.9                                                                                |
| LnGrp LOS                    | F                                                                                 | D                                                                                 | D                                                                                 | F                                                                                 | F                                                                                 | E                                                                                 | F                                                                                   | D                                                                                   | C                                                                                   | E                                                                                   | C                                                                                   | D                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 2471                                                                              |                                                                                   |                                                                                   | 4166                                                                              |                                                                                   |                                                                                     | 1729                                                                                |                                                                                     |                                                                                     | 639                                                                                 |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 143.4                                                                             |                                                                                   |                                                                                   | 226.6                                                                             |                                                                                   |                                                                                     | 346.9                                                                               |                                                                                     |                                                                                     | 43.7                                                                                |                                                                                     |
| Approach LOS                 |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                     | F                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              | 55.7                                                                              | 13.0                                                                              | 40.3                                                                              | 10.0                                                                              | 56.7                                                                              | 11.9                                                                                | 41.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                               | 3.7                                                                               | 5.8                                                                               | 3.7                                                                               | 6.5                                                                               | 3.7                                                                                 | 5.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 7.3                                                                               | 38.9                                                                              | 9.3                                                                               | 44.8                                                                              | 6.3                                                                               | 39.9                                                                              | 9.3                                                                                 | 44.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 9.3                                                                               | 43.1                                                                              | 11.3                                                                              | 19.4                                                                              | 8.3                                                                               | 52.2                                                                              | 8.2                                                                                 | 30.2                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 5.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 213.9                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/28/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↰     | ↰     | ↰     |
| Traffic Volume (vph) | 1523  | 3343  | 350   | 0     | 613   |
| Future Volume (vph)  | 1523  | 3343  | 350   | 0     | 613   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 63.0  | 63.0  | 22.0  | 22.0  | 22.0  |
| Total Split (%)      | 74.1% | 74.1% | 25.9% | 25.9% | 25.9% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 9 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.

|          |  |      |
|----------|--|------|
| → Ø2 (R) |  | ↰ Ø4 |
| 63 s     |  | 22 s |
| ← Ø6 (R) |  |      |
| 63 s     |  |      |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 7: I-215 SB Ramps & Alessandro Bl. 05/28/2019

|                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                             | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                  |                                                                                   |  |  |                                                                                   |  |  |                                                                                    |                                                                                     |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                               | 0                                                                                 | 1523                                                                              | 487                                                                               | 0                                                                                 | 3343                                                                              | 270                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 350                                                                                 | 0                                                                                   | 613                                                                                 |
| Future Volume (veh/h)                                                | 0                                                                                 | 1523                                                                              | 487                                                                               | 0                                                                                 | 3343                                                                              | 270                                                                               | 0                                                                                  | 0                                                                                   | 0                                                                                   | 350                                                                                 | 0                                                                                   | 613                                                                                 |
| Initial Q (Qb), veh                                                  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                  | 1.00                                                                              |                                                                                   | 0.98                                                                              | 1.00                                                                              |                                                                                   | 0.98                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                     | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                               | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              |                                                                                    |                                                                                     |                                                                                     | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                 | 0                                                                                 | 1570                                                                              | 473                                                                               | 0                                                                                 | 3446                                                                              | 278                                                                               |                                                                                    |                                                                                     |                                                                                     | 241                                                                                 | 0                                                                                   | 717                                                                                 |
| Peak Hour Factor                                                     | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                           | 0                                                                                 | 2671                                                                              | 790                                                                               | 0                                                                                 | 3312                                                                              | 259                                                                               |                                                                                    |                                                                                     |                                                                                     | 362                                                                                 | 0                                                                                   | 643                                                                                 |
| Arrive On Green                                                      | 0.00                                                                              | 0.68                                                                              | 0.68                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.20                                                                                | 0.00                                                                                | 0.20                                                                                |
| Sat Flow, veh/h                                                      | 0                                                                                 | 4120                                                                              | 1169                                                                              | 0                                                                                 | 5067                                                                              | 383                                                                               |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 3216                                                                                |
| Grp Volume(v), veh/h                                                 | 0                                                                                 | 1371                                                                              | 672                                                                               | 0                                                                                 | 2403                                                                              | 1321                                                                              |                                                                                    |                                                                                     |                                                                                     | 241                                                                                 | 0                                                                                   | 717                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                             | 0                                                                                 | 1729                                                                              | 1659                                                                              | 0                                                                                 | 1729                                                                              | 1821                                                                              |                                                                                    |                                                                                     |                                                                                     | 1810                                                                                | 0                                                                                   | 1608                                                                                |
| Q Serve(g_s), s                                                      | 0.0                                                                               | 18.1                                                                              | 18.7                                                                              | 0.0                                                                               | 0.0                                                                               | 57.5                                                                              |                                                                                    |                                                                                     |                                                                                     | 10.4                                                                                | 0.0                                                                                 | 17.0                                                                                |
| Cycle Q Clear(g_c), s                                                | 0.0                                                                               | 18.1                                                                              | 18.7                                                                              | 0.0                                                                               | 0.0                                                                               | 57.5                                                                              |                                                                                    |                                                                                     |                                                                                     | 10.4                                                                                | 0.0                                                                                 | 17.0                                                                                |
| Prop In Lane                                                         | 0.00                                                                              |                                                                                   | 0.70                                                                              | 0.00                                                                              |                                                                                   | 0.21                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                               | 0                                                                                 | 2339                                                                              | 1122                                                                              | 0                                                                                 | 2339                                                                              | 1232                                                                              |                                                                                    |                                                                                     |                                                                                     | 362                                                                                 | 0                                                                                   | 643                                                                                 |
| V/C Ratio(X)                                                         | 0.00                                                                              | 0.59                                                                              | 0.60                                                                              | 0.00                                                                              | 1.03                                                                              | 1.07                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.67                                                                                | 0.00                                                                                | 1.11                                                                                |
| Avail Cap(c_a), veh/h                                                | 0                                                                                 | 2339                                                                              | 1122                                                                              | 0                                                                                 | 2339                                                                              | 1232                                                                              |                                                                                    |                                                                                     |                                                                                     | 362                                                                                 | 0                                                                                   | 643                                                                                 |
| HCM Platoon Ratio                                                    | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                              | 2.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                   | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.09                                                                              | 0.09                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                             | 0.0                                                                               | 7.4                                                                               | 7.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 31.4                                                                                | 0.0                                                                                 | 34.0                                                                                |
| Incr Delay (d2), s/veh                                               | 0.0                                                                               | 1.1                                                                               | 2.4                                                                               | 0.0                                                                               | 14.6                                                                              | 34.3                                                                              |                                                                                    |                                                                                     |                                                                                     | 4.6                                                                                 | 0.0                                                                                 | 71.4                                                                                |
| Initial Q Delay(d3),s/veh                                            | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                             | 0.0                                                                               | 4.5                                                                               | 4.8                                                                               | 0.0                                                                               | 4.7                                                                               | 11.7                                                                              |                                                                                    |                                                                                     |                                                                                     | 4.7                                                                                 | 0.0                                                                                 | 12.5                                                                                |
| Unsig. Movement Delay, s/veh                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                 | 0.0                                                                               | 8.5                                                                               | 9.8                                                                               | 0.0                                                                               | 14.6                                                                              | 34.3                                                                              |                                                                                    |                                                                                     |                                                                                     | 36.0                                                                                | 0.0                                                                                 | 105.4                                                                               |
| LnGrp LOS                                                            | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | F                                                                                 | F                                                                                 |                                                                                    |                                                                                     |                                                                                     | D                                                                                   | A                                                                                   | F                                                                                   |
| Approach Vol, veh/h                                                  |                                                                                   | 2043                                                                              |                                                                                   |                                                                                   | 3724                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 958                                                                                 |                                                                                     |
| Approach Delay, s/veh                                                |                                                                                   | 8.9                                                                               |                                                                                   |                                                                                   | 21.6                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 87.9                                                                                |                                                                                     |
| Approach LOS                                                         |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | F                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                 |                                                                                   | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                             |                                                                                   | 63.0                                                                              |                                                                                   | 22.0                                                                              |                                                                                   | 63.0                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                              |                                                                                   | 5.5                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 5.5                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                          |                                                                                   | 57.5                                                                              |                                                                                   | 17.0                                                                              |                                                                                   | 57.5                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                         |                                                                                   | 20.7                                                                              |                                                                                   | 19.0                                                                              |                                                                                   | 59.5                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                              |                                                                                   | 19.1                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                   |                                                                                   |                                                                                   |                                                                                   | 27.2                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                          |                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved volume balancing among the lanes for turning movement. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/28/2019

|                      |  |                                                                                                                                                                      |                                                                                                                                                                      |  |  |                                                                                    |  |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                               | NBT                                                                                                                                                                 | NBR                                                                                |
| Lane Configurations  |  |    |    |  |  |   |   |
| Traffic Volume (vph) | 99                                                                                | 1737                                                                                                                                                                                                                                                  | 2491                                                                                                                                                                                                                                                  | 211                                                                               | 1185                                                                              | 35                                                                                                                                                                  | 274                                                                                |
| Future Volume (vph)  | 99                                                                                | 1737                                                                                                                                                                                                                                                  | 2491                                                                                                                                                                                                                                                  | 211                                                                               | 1185                                                                              | 35                                                                                                                                                                  | 274                                                                                |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Split                                                                             | NA                                                                                                                                                                  | Perm                                                                               |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     |                                                                                   | 8                                                                                 | 8                                                                                                                                                                   |                                                                                    |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                     | 8                                                                                  |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     | 6                                                                                 | 8                                                                                 | 8                                                                                                                                                                   | 8                                                                                  |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                    |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                |
| Minimum Split (s)    | 9.5                                                                               | 10.5                                                                                                                                                                                                                                                  | 33.5                                                                                                                                                                                                                                                  | 33.5                                                                              | 10.0                                                                              | 10.0                                                                                                                                                                | 10.0                                                                               |
| Total Split (s)      | 10.0                                                                              | 49.0                                                                                                                                                                                                                                                  | 39.0                                                                                                                                                                                                                                                  | 39.0                                                                              | 36.0                                                                              | 36.0                                                                                                                                                                | 36.0                                                                               |
| Total Split (%)      | 11.8%                                                                             | 57.6%                                                                                                                                                                                                                                                 | 45.9%                                                                                                                                                                                                                                                 | 45.9%                                                                             | 42.4%                                                                             | 42.4%                                                                                                                                                               | 42.4%                                                                              |
| Yellow Time (s)      | 3.5                                                                               | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                               | 4.0                                                                               | 4.0                                                                                                                                                                 | 4.0                                                                                |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                                                                                                 | 1.0                                                                                |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                |
| Total Lost Time (s)  | 4.5                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                |
| Lead/Lag             | Lag                                                                               |                                                                                                                                                                                                                                                       | Lead                                                                                                                                                                                                                                                  | Lead                                                                              |                                                                                   |                                                                                                                                                                     |                                                                                    |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                                   | Yes                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                    |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | Max                                                                               | Max                                                                                                                                                                 | Max                                                                                |

## Intersection Summary

Cycle Length: 85

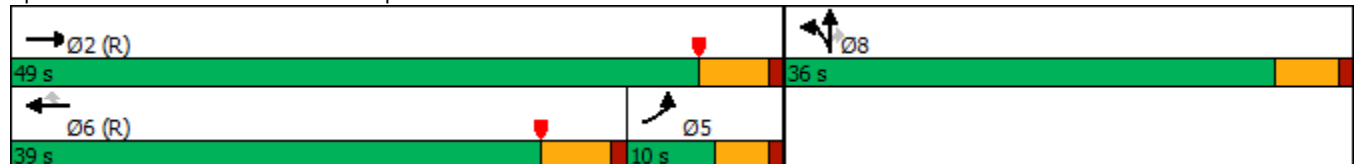
Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/28/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)       | 99                                                                                | 1737                                                                                                                                                                                                                                                  | 67                                                                                | 0                                                                                 | 2491                                                                                                                                                                                                                                                  | 211                                                                               | 1185                                                                                | 35                                                                                                                                                                      | 274                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 99                                                                                | 1737                                                                                                                                                                                                                                                  | 67                                                                                | 0                                                                                 | 2491                                                                                                                                                                                                                                                  | 211                                                                               | 1185                                                                                | 35                                                                                                                                                                      | 274                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h         | 101                                                                               | 1772                                                                                                                                                                                                                                                  | 68                                                                                | 0                                                                                 | 2542                                                                                                                                                                                                                                                  | 195                                                                               | 1292                                                                                | 0                                                                                                                                                                       | 158                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor             | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                              | 0.98                                                                                                                                                                                                                                                  | 0.98                                                                              | 0.98                                                                                | 0.98                                                                                                                                                                    | 0.98                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                   | 399                                                                               | 3478                                                                                                                                                                                                                                                  | 133                                                                               | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green              | 0.44                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 0.39                                                                                                                                                                                                                                                  | 0.39                                                                              | 0.36                                                                                | 0.00                                                                                                                                                                    | 0.36                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h              | 1810                                                                              | 5121                                                                                                                                                                                                                                                  | 196                                                                               | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1573                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h         | 101                                                                               | 1196                                                                                                                                                                                                                                                  | 644                                                                               | 0                                                                                 | 2542                                                                                                                                                                                                                                                  | 195                                                                               | 1292                                                                                | 0                                                                                                                                                                       | 158                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1860                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1573                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 3.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 33.5                                                                                                                                                                                                                                                  | 7.3                                                                               | 30.0                                                                                | 0.0                                                                                                                                                                     | 5.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 3.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 33.5                                                                                                                                                                                                                                                  | 7.3                                                                               | 30.0                                                                                | 0.0                                                                                                                                                                     | 5.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.11                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 399                                                                               | 2349                                                                                                                                                                                                                                                  | 1263                                                                              | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.25                                                                              | 0.51                                                                                                                                                                                                                                                  | 0.51                                                                              | 0.00                                                                              | 1.24                                                                                                                                                                                                                                                  | 0.31                                                                              | 0.98                                                                                | 0.00                                                                                                                                                                    | 0.27                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 399                                                                               | 2349                                                                                                                                                                                                                                                  | 1263                                                                              | 0                                                                                 | 2044                                                                                                                                                                                                                                                  | 620                                                                               | 1320                                                                                | 0                                                                                                                                                                       | 587                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 2.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.71                                                                              | 0.71                                                                                                                                                                                                                                                  | 0.71                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 19.4                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 25.8                                                                                                                                                                                                                                                  | 17.8                                                                              | 26.7                                                                                | 0.0                                                                                                                                                                     | 19.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 0.2                                                                               | 0.6                                                                                                                                                                                                                                                   | 1.0                                                                               | 0.0                                                                               | 113.9                                                                                                                                                                                                                                                 | 1.3                                                                               | 20.2                                                                                | 0.0                                                                                                                                                                     | 1.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 1.1                                                                               | 0.2                                                                                                                                                                                                                                                   | 0.4                                                                               | 0.0                                                                               | 33.1                                                                                                                                                                                                                                                  | 2.5                                                                               | 15.2                                                                                | 0.0                                                                                                                                                                     | 2.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 19.5                                                                              | 0.6                                                                                                                                                                                                                                                   | 1.0                                                                               | 0.0                                                                               | 139.6                                                                                                                                                                                                                                                 | 19.1                                                                              | 46.9                                                                                | 0.0                                                                                                                                                                     | 20.1                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | B                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | F                                                                                                                                                                                                                                                     | B                                                                                 | D                                                                                   | A                                                                                                                                                                       | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 1941                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2737                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1450                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 1.7                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 131.1                                                                             |                                                                                                                                                                                                                                                       |                                                                                   | 44.0                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | F                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | D                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 63.3                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 24.3                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 39.0                                                                                |                                                                                                                                                                         |                                                                                     | 36.0                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 5.5                                                                               |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 43.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | * 34                                                                                |                                                                                                                                                                         |                                                                                     | 31.0                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 35.5                                                                                |                                                                                                                                                                         |                                                                                     | 32.0                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 16.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                                 |                                                                                                                                                                         |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |

### Intersection Summary

HCM 6th Ctrl Delay 69.5

HCM 6th LOS E

### Notes

User approved volume balancing among the lanes for turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection             |                                                                                   |          |                                                                                   |        |      |                                                                                   |
|--------------------------|-----------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 3.5                                                                               |          |                                                                                   |        |      |                                                                                   |
| Movement                 | WBL                                                                               | WBR      | NBT                                                                               | NBR    | SBL  | SBT                                                                               |
| Lane Configurations      |  |          |  |        |      |  |
| Traffic Vol, veh/h       | 20                                                                                | 0        | 15                                                                                | 9      | 0    | 6                                                                                 |
| Future Vol, veh/h        | 20                                                                                | 0        | 15                                                                                | 9      | 0    | 6                                                                                 |
| Conflicting Peds, #/hr   | 0                                                                                 | 0        | 0                                                                                 | 0      | 0    | 0                                                                                 |
| Sign Control             | Stop                                                                              | Stop     | Free                                                                              | Free   | Free | Free                                                                              |
| RT Channelized           | -                                                                                 | None     | -                                                                                 | None   | -    | None                                                                              |
| Storage Length           | 0                                                                                 | -        | -                                                                                 | -      | -    | -                                                                                 |
| Veh in Median Storage, # | 0                                                                                 | -        | 0                                                                                 | -      | -    | 0                                                                                 |
| Grade, %                 | 0                                                                                 | -        | 0                                                                                 | -      | -    | 0                                                                                 |
| Peak Hour Factor         | 92                                                                                | 92       | 92                                                                                | 92     | 92   | 92                                                                                |
| Heavy Vehicles, %        | 0                                                                                 | 0        | 0                                                                                 | 0      | 0    | 0                                                                                 |
| Mvmt Flow                | 22                                                                                | 0        | 16                                                                                | 10     | 0    | 7                                                                                 |
| Major/Minor              | Minor1                                                                            | Major1   |                                                                                   | Major2 |      |                                                                                   |
| Conflicting Flow All     | 28                                                                                | 21       | 0                                                                                 | 0      | 26   | 0                                                                                 |
| Stage 1                  | 21                                                                                | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | 7                                                                                 | -        | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy            | 6.4                                                                               | 6.2      | -                                                                                 | -      | 4.1  | -                                                                                 |
| Critical Hdwy Stg 1      | 5.4                                                                               | -        | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy Stg 2      | 5.4                                                                               | -        | -                                                                                 | -      | -    | -                                                                                 |
| Follow-up Hdwy           | 3.5                                                                               | 3.3      | -                                                                                 | -      | 2.2  | -                                                                                 |
| Pot Cap-1 Maneuver       | 992                                                                               | 1062     | -                                                                                 | -      | 1601 | -                                                                                 |
| Stage 1                  | 1007                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | 1021                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Platoon blocked, %       |                                                                                   |          | -                                                                                 | -      |      | -                                                                                 |
| Mov Cap-1 Maneuver       | 992                                                                               | 1062     | -                                                                                 | -      | 1601 | -                                                                                 |
| Mov Cap-2 Maneuver       | 992                                                                               | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 1                  | 1007                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | 1021                                                                              | -        | -                                                                                 | -      | -    | -                                                                                 |
| Approach                 | WB                                                                                | NB       |                                                                                   | SB     |      |                                                                                   |
| HCM Control Delay, s     | 8.7                                                                               | 0        |                                                                                   | 0      |      |                                                                                   |
| HCM LOS                  | A                                                                                 |          |                                                                                   |        |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBT                                                                               | NBRWBLn1 |                                                                                   | SBL    | SBT  |                                                                                   |
| Capacity (veh/h)         | -                                                                                 | - 992    |                                                                                   | 1601   | -    |                                                                                   |
| HCM Lane V/C Ratio       | -                                                                                 | - 0.022  |                                                                                   | -      | -    |                                                                                   |
| HCM Control Delay (s)    | -                                                                                 | - 8.7    |                                                                                   | 0      | -    |                                                                                   |
| HCM Lane LOS             | -                                                                                 | - A      |                                                                                   | A      | -    |                                                                                   |
| HCM 95th %tile Q(veh)    | -                                                                                 | - 0.1    |                                                                                   | 0      | -    |                                                                                   |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/29/2019

|                      |  |  |  |  |  |  |   |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |                                                                                   |  |  |                                                                                     |  |  |
| Traffic Volume (vph) | 13                                                                                | 3284                                                                              | 72                                                                                | 2780                                                                              | 27                                                                                | 59                                                                                | 0                                                                                   | 58                                                                                  | 28                                                                                  | 0                                                                                   | 11                                                                                  |
| Future Volume (vph)  | 13                                                                                | 3284                                                                              | 72                                                                                | 2780                                                                              | 27                                                                                | 59                                                                                | 0                                                                                   | 58                                                                                  | 28                                                                                  | 0                                                                                   | 11                                                                                  |
| Turn Type            | Prot                                                                              | NA                                                                                | Prot                                                                              | NA                                                                                | Perm                                                                              | Perm                                                                              | NA                                                                                  | Perm                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                   |                                                                                   | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 8                                                                                 |                                                                                     | 8                                                                                   | 4                                                                                   |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 8                                                                                 | 8                                                                                   | 8                                                                                   | 4                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 9.2                                                                               | 28.5                                                                              | 11.0                                                                              | 28.5                                                                              | 28.5                                                                              | 30.6                                                                              | 30.6                                                                                | 30.6                                                                                | 26.6                                                                                | 26.6                                                                                | 26.6                                                                                |
| Total Split (s)      | 9.2                                                                               | 75.0                                                                              | 10.0                                                                              | 75.8                                                                              | 75.8                                                                              | 35.0                                                                              | 35.0                                                                                | 35.0                                                                                | 35.0                                                                                | 35.0                                                                                | 35.0                                                                                |
| Total Split (%)      | 7.7%                                                                              | 62.5%                                                                             | 8.3%                                                                              | 63.2%                                                                             | 63.2%                                                                             | 29.2%                                                                             | 29.2%                                                                               | 29.2%                                                                               | 29.2%                                                                               | 29.2%                                                                               | 29.2%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.6                                                                               | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 | 3.6                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.2                                                                               | 6.5                                                                               | 4.2                                                                               | 6.5                                                                               | 6.5                                                                               |                                                                                   | 4.6                                                                                 | 4.6                                                                                 |                                                                                     | 4.6                                                                                 | 4.6                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | Max                                                                               | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 2: Barton St. & Alessandro Bl.

|                                                                                     |                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| Ø1                                                                                  | Ø2 (R)                                                                              | Ø4                                                                                    |
| 10 s                                                                                | 75 s                                                                                | 35 s                                                                                  |
|  |  |  |
| Ø5                                                                                  | Ø6 (R)                                                                              | Ø8                                                                                    |
| 9.2 s                                                                               | 75.8 s                                                                              | 35 s                                                                                  |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 2: Barton St. & Alessandro Bl.

05/29/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |  |                                                                                    |  |  |                                                                                     |  |  |
| Traffic Volume (veh/h)       | 13                                                                                | 3284                                                                                                                                                                                                                                                  | 41                                                                                | 72                                                                                | 2780                                                                                                                                                                                                                                                  | 27                                                                                | 59                                                                                 | 0                                                                                   | 58                                                                                  | 28                                                                                  | 0                                                                                   | 11                                                                                  |
| Future Volume (veh/h)        | 13                                                                                | 3284                                                                                                                                                                                                                                                  | 41                                                                                | 72                                                                                | 2780                                                                                                                                                                                                                                                  | 27                                                                                | 59                                                                                 | 0                                                                                   | 58                                                                                  | 28                                                                                  | 0                                                                                   | 11                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 14                                                                                | 3457                                                                                                                                                                                                                                                  | 41                                                                                | 76                                                                                | 2926                                                                                                                                                                                                                                                  | 28                                                                                | 62                                                                                 | 0                                                                                   | 39                                                                                  | 29                                                                                  | 0                                                                                   | -1                                                                                  |
| Peak Hour Factor             | 0.95                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.95                                                                               | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 28                                                                                | 3209                                                                                                                                                                                                                                                  | 38                                                                                | 87                                                                                | 3441                                                                                                                                                                                                                                                  | 972                                                                               | 0                                                                                  | 0                                                                                   | 406                                                                                 | 411                                                                                 | 0                                                                                   | 408                                                                                 |
| Arrive On Green              | 0.02                                                                              | 0.57                                                                                                                                                                                                                                                  | 0.57                                                                              | 0.05                                                                              | 0.60                                                                                                                                                                                                                                                  | 0.60                                                                              | 0.25                                                                               | 0.00                                                                                | 0.25                                                                                | 0.25                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5622                                                                                                                                                                                                                                                  | 66                                                                                | 1810                                                                              | 5700                                                                                                                                                                                                                                                  | 1610                                                                              | 0                                                                                  | 0                                                                                   | 1604                                                                                | 1385                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 14                                                                                | 2332                                                                                                                                                                                                                                                  | 1166                                                                              | 76                                                                                | 2926                                                                                                                                                                                                                                                  | 28                                                                                | 62                                                                                 | 0                                                                                   | 39                                                                                  | 29                                                                                  | 0                                                                                   | -1                                                                                  |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                                                                                                                                                                                                  | 1888                                                                              | 1810                                                                              | 1900                                                                                                                                                                                                                                                  | 1610                                                                              | 0                                                                                  | 0                                                                                   | 1604                                                                                | 1385                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.9                                                                               | 68.5                                                                                                                                                                                                                                                  | 68.5                                                                              | 5.0                                                                               | 50.2                                                                                                                                                                                                                                                  | 0.8                                                                               | 0.0                                                                                | 0.0                                                                                 | 2.2                                                                                 | 1.9                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.9                                                                               | 68.5                                                                                                                                                                                                                                                  | 68.5                                                                              | 5.0                                                                               | 50.2                                                                                                                                                                                                                                                  | 0.8                                                                               | 0.0                                                                                | 0.0                                                                                 | 2.2                                                                                 | 1.9                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.04                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 28                                                                                | 2169                                                                                                                                                                                                                                                  | 1078                                                                              | 87                                                                                | 3441                                                                                                                                                                                                                                                  | 972                                                                               | 0                                                                                  | 0                                                                                   | 406                                                                                 | 411                                                                                 | 0                                                                                   | 408                                                                                 |
| V/C Ratio(X)                 | 0.50                                                                              | 1.08                                                                                                                                                                                                                                                  | 1.08                                                                              | 0.87                                                                              | 0.85                                                                                                                                                                                                                                                  | 0.03                                                                              | 0.00                                                                               | 0.00                                                                                | 0.10                                                                                | 0.07                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2169                                                                                                                                                                                                                                                  | 1078                                                                              | 87                                                                                | 3441                                                                                                                                                                                                                                                  | 972                                                                               | 0                                                                                  | 0                                                                                   | 406                                                                                 | 411                                                                                 | 0                                                                                   | 408                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.73                                                                              | 0.73                                                                                                                                                                                                                                                  | 0.73                                                                              | 1.00                                                                               | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.6                                                                              | 25.7                                                                                                                                                                                                                                                  | 25.7                                                                              | 56.7                                                                              | 19.4                                                                                                                                                                                                                                                  | 9.6                                                                               | 0.0                                                                                | 0.0                                                                                 | 34.3                                                                                | 34.2                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 5.0                                                                               | 43.1                                                                                                                                                                                                                                                  | 52.4                                                                              | 43.5                                                                              | 2.1                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.5                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.4                                                                               | 39.0                                                                                                                                                                                                                                                  | 41.5                                                                              | 3.3                                                                               | 19.1                                                                                                                                                                                                                                                  | 0.3                                                                               | 1.4                                                                                | 0.0                                                                                 | 0.9                                                                                 | 0.7                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 63.6                                                                              | 68.8                                                                                                                                                                                                                                                  | 78.1                                                                              | 100.2                                                                             | 21.5                                                                                                                                                                                                                                                  | 9.6                                                                               | 0.0                                                                                | 0.0                                                                                 | 34.8                                                                                | 34.5                                                                                | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | F                                                                                                                                                                                                                                                     | F                                                                                 | F                                                                                 | C                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                  | A                                                                                   | C                                                                                   | C                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 3512                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 3030                                                                                                                                                                                                                                                  |                                                                                   |                                                                                    |                                                                                     | 101                                                                                 |                                                                                     | 28                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 71.9                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 23.3                                                                                                                                                                                                                                                  |                                                                                   |                                                                                    |                                                                                     | 0.0                                                                                 |                                                                                     | 35.7                                                                                |                                                                                     |
| Approach LOS                 | E                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | C                                                                                                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                     | A                                                                                   |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     |                                                                                   | 4                                                                                 | 5                                                                                                                                                                                                                                                     | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.0                                                                              | 75.0                                                                                                                                                                                                                                                  |                                                                                   | 35.0                                                                              | 6.1                                                                                                                                                                                                                                                   | 78.9                                                                              |                                                                                    | 35.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             | 6.5                                                                                                                                                                                                                                                   |                                                                                   | 4.6                                                                               | * 4.2                                                                                                                                                                                                                                                 | 6.5                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 5.8                                                                             | 68.5                                                                                                                                                                                                                                                  |                                                                                   | 30.4                                                                              | * 5                                                                                                                                                                                                                                                   | 69.3                                                                              |                                                                                    | 30.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 7.0                                                                               | 70.5                                                                                                                                                                                                                                                  |                                                                                   | 3.9                                                                               | 2.9                                                                                                                                                                                                                                                   | 52.2                                                                              |                                                                                    | 4.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   |                                                                                   | 0.1                                                                               | 0.0                                                                                                                                                                                                                                                   | 16.6                                                                              |                                                                                    | 0.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 48.6 |
| HCM 6th LOS        | D    |

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/29/2019



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | Ø6   |
|----------------------|------|-------|------|-------|-------|-------|------|
| Lane Configurations  |      |       |      |       |       |       |      |
| Traffic Volume (vph) | 4    | 3365  | 4    | 2879  | 6     | 0     |      |
| Future Volume (vph)  | 4    | 3365  | 4    | 2879  | 6     | 0     |      |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    |      |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     | 6    |
| Permitted Phases     |      |       |      |       | 2     |       |      |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     |      |
| Switch Phase         |      |       |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.2  | 23.5  | 9.2  | 23.5  | 14.6  | 14.6  | 14.6 |
| Total Split (s)      | 10.0 | 95.0  | 10.0 | 95.0  | 15.0  | 15.0  | 15.0 |
| Total Split (%)      | 8.3% | 79.2% | 8.3% | 79.2% | 12.5% | 12.5% | 13%  |
| Yellow Time (s)      | 3.2  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   |      |
| Total Lost Time (s)  | 4.2  | 6.5   | 4.2  | 6.5   |       | 4.6   |      |
| Lead/Lag             | Lag  | Lead  | Lag  | Lead  |       |       |      |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |      |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|      |        |      |
|------|--------|------|
| Ø2   | Ø4 (R) | Ø3   |
| 15 s | 95 s   | 10 s |
| Ø6   | Ø8 (R) | Ø7   |
| 15 s | 95 s   | 10 s |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 05/29/2019

|                              |  |                                                                                                                                                                            |  |  |                                                                                                                                                                            |  |  |                                                                                         |  |  |                                                                                         |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                         | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                         | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                        | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                        | SBR                                                                                 |
| Lane Configurations          |  | <br><br> |                                                                                   |  | <br><br> |                                                                                   |                                                                                    | <br> |                                                                                     |                                                                                     | <br> |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 3365                                                                                                                                                                                                                                                        | 1                                                                                 | 4                                                                                 | 2879                                                                                                                                                                                                                                                        | 0                                                                                 | 6                                                                                  | 0                                                                                                                                                                          | 2                                                                                   | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 3365                                                                                                                                                                                                                                                        | 1                                                                                 | 4                                                                                 | 2879                                                                                                                                                                                                                                                        | 0                                                                                 | 6                                                                                  | 0                                                                                                                                                                          | 2                                                                                   | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                            | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                            | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                 |                                                                                                                                                                            |                                                                                     | No                                                                                  |                                                                                                                                                                            |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                               | 1900                                                                                                                                                                       | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                       | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 3658                                                                                                                                                                                                                                                        | 1                                                                                 | 4                                                                                 | 3129                                                                                                                                                                                                                                                        | 0                                                                                 | 7                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                                                                                                       | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                       | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   |
| Cap, veh/h                   | 213                                                                               | 3950                                                                                                                                                                                                                                                        | 1                                                                                 | 213                                                                               | 3825                                                                                                                                                                                                                                                        | 0                                                                                 | 85                                                                                 | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 33                                                                                                                                                                         | 0                                                                                   |
| Arrive On Green              | 0.12                                                                              | 0.74                                                                                                                                                                                                                                                        | 0.74                                                                              | 0.12                                                                              | 0.74                                                                                                                                                                                                                                                        | 0.00                                                                              | 0.02                                                                               | 0.00                                                                                                                                                                       | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5356                                                                                                                                                                                                                                                        | 1                                                                                 | 1810                                                                              | 5358                                                                                                                                                                                                                                                        | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                       | 0                                                                                   |
| Grp Volume(v), veh/h         | 4                                                                                 | 2361                                                                                                                                                                                                                                                        | 1298                                                                              | 4                                                                                 | 3129                                                                                                                                                                                                                                                        | 0                                                                                 | 7                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 1900                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 0                                                                                 | 1440                                                                               | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 1900                                                                                                                                                                       | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 67.8                                                                                                                                                                                                                                                        | 67.9                                                                              | 0.2                                                                               | 47.9                                                                                                                                                                                                                                                        | 0.0                                                                               | 0.6                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 67.8                                                                                                                                                                                                                                                        | 67.9                                                                              | 0.2                                                                               | 47.9                                                                                                                                                                                                                                                        | 0.0                                                                               | 0.6                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.00                                                                              | 1.00                                                                               |                                                                                                                                                                            | 0.00                                                                                | 0.00                                                                                |                                                                                                                                                                            | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 213                                                                               | 2550                                                                                                                                                                                                                                                        | 1401                                                                              | 213                                                                               | 3825                                                                                                                                                                                                                                                        | 0                                                                                 | 85                                                                                 | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 33                                                                                                                                                                         | 0                                                                                   |
| V/C Ratio(X)                 | 0.02                                                                              | 0.93                                                                                                                                                                                                                                                        | 0.93                                                                              | 0.02                                                                              | 0.82                                                                                                                                                                                                                                                        | 0.00                                                                              | 0.08                                                                               | 0.00                                                                                                                                                                       | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 213                                                                               | 2550                                                                                                                                                                                                                                                        | 1401                                                                              | 213                                                                               | 3825                                                                                                                                                                                                                                                        | 0                                                                                 | 185                                                                                | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 165                                                                                                                                                                        | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                |
| Upstream Filter(I)           | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                        | 0.09                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 0.00                                                                              | 1.00                                                                               | 0.00                                                                                                                                                                       | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 46.8                                                                              | 13.0                                                                                                                                                                                                                                                        | 13.0                                                                              | 46.8                                                                              | 10.4                                                                                                                                                                                                                                                        | 0.0                                                                               | 58.2                                                                               | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.8                                                                                                                                                                                                                                                         | 1.4                                                                               | 0.0                                                                               | 2.1                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.4                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 18.0                                                                                                                                                                                                                                                        | 19.9                                                                              | 0.1                                                                               | 13.2                                                                                                                                                                                                                                                        | 0.0                                                                               | 0.2                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| LnGrp Delay(d),s/veh         | 46.8                                                                              | 13.8                                                                                                                                                                                                                                                        | 14.4                                                                              | 46.8                                                                              | 12.5                                                                                                                                                                                                                                                        | 0.0                                                                               | 58.6                                                                               | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | B                                                                                                                                                                                                                                                           | B                                                                                 | D                                                                                 | B                                                                                                                                                                                                                                                           | A                                                                                 | E                                                                                  | A                                                                                                                                                                          | A                                                                                   | A                                                                                   | A                                                                                                                                                                          | A                                                                                   |
| Approach Vol, veh/h          | 3663                                                                              |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   | 3133                                                                                                                                                                                                                                                        |                                                                                   | 7                                                                                  |                                                                                                                                                                            |                                                                                     |                                                                                     | 0                                                                                                                                                                          |                                                                                     |
| Approach Delay, s/veh        | 14.1                                                                              |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   | 12.5                                                                                                                                                                                                                                                        |                                                                                   | 58.6                                                                               |                                                                                                                                                                            |                                                                                     |                                                                                     | 0.0                                                                                                                                                                        |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   | B                                                                                                                                                                                                                                                           |                                                                                   | E                                                                                  |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                             | 3                                                                                 |                                                                                   | 4                                                                                                                                                                                                                                                           |                                                                                   | 6                                                                                  |                                                                                                                                                                            | 7                                                                                   |                                                                                     | 8                                                                                                                                                                          |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 6.7                                                                               |                                                                                                                                                                                                                                                             | 18.3                                                                              |                                                                                   | 95.0                                                                                                                                                                                                                                                        |                                                                                   | 6.7                                                                                |                                                                                                                                                                            | 18.3                                                                                |                                                                                     | 95.0                                                                                                                                                                       |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                             | 4.2                                                                               |                                                                                   | * 6.5                                                                                                                                                                                                                                                       |                                                                                   | 4.6                                                                                |                                                                                                                                                                            | 4.2                                                                                 |                                                                                     | * 6.5                                                                                                                                                                      |                                                                                     |
| Max Green Setting (Gmax), s  | 10.4                                                                              |                                                                                                                                                                                                                                                             | 5.8                                                                               |                                                                                   | * 89                                                                                                                                                                                                                                                        |                                                                                   | 10.4                                                                               |                                                                                                                                                                            | 5.8                                                                                 |                                                                                     | * 89                                                                                                                                                                       |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.6                                                                               |                                                                                                                                                                                                                                                             | 2.2                                                                               |                                                                                   | 69.9                                                                                                                                                                                                                                                        |                                                                                   | 0.0                                                                                |                                                                                                                                                                            | 2.2                                                                                 |                                                                                     | 49.9                                                                                                                                                                       |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                             | 0.0                                                                               |                                                                                   | 18.5                                                                                                                                                                                                                                                        |                                                                                   | 0.0                                                                                |                                                                                                                                                                            | 0.0                                                                                 |                                                                                     | 36.9                                                                                                                                                                       |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                             | 13.4                                                                              |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                             | B                                                                                 |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Intersection             |       |      |      |       |      |      |      |      |      |      |      |      |
|--------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 3.5   |      |      |       |      |      |      |      |      |      |      |      |
| Movement                 | EBL   | EBT  | EBR  | WBL   | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      | ↵ ↑↑↑ |      |      | ↵ ↑↑↑ |      |      | ↵    | ↵    |      | ↵    | ↵    |      |
| Traffic Vol, veh/h       | 2     | 3365 | 14   | 27    | 2878 | 16   | 2    | 0    | 11   | 37   | 0    | 5    |
| Future Vol, veh/h        | 2     | 3365 | 14   | 27    | 2878 | 16   | 2    | 0    | 11   | 37   | 0    | 5    |
| Conflicting Peds, #/hr   | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free  | Free | Free | Free  | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -     | -    | None | -     | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | 155   | -    | -    | 155   | -    | -    | 0    | -    | -    | 0    | -    | -    |
| Veh in Median Storage, # | -     | 0    | -    | -     | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -     | 0    | -    | -     | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 92    | 92   | 92   | 92    | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 0     | 0    | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 2     | 3658 | 15   | 29    | 3128 | 17   | 2    | 0    | 12   | 40   | 0    | 5    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |      |      | Minor2 |      |      |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 3145   | 0 | 0 | 3673   | 0 | 0 | 4979   | 6873 | 1837 | 4662   | 6872 | 1573 |
| Stage 1              | -      | - | - | -      | - | - | 3670   | 3670 | -    | 3195   | 3195 | -    |
| Stage 2              | -      | - | - | -      | - | - | 1309   | 3203 | -    | 1467   | 3677 | -    |
| Critical Hdwy        | 5.3    | - | - | 5.3    | - | - | 6.4    | 6.5  | 7.1  | 6.4    | 6.5  | 7.1  |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 7.3    | 5.5  | -    | 7.3    | 5.5  | -    |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.7    | 5.5  | -    | 6.7    | 5.5  | -    |
| Follow-up Hdwy       | 3.1    | - | - | 3.1    | - | - | 3.8    | 4    | 3.9  | 3.8    | 4    | 3.9  |
| Pot Cap-1 Maneuver   | 33     | - | - | ~ 17   | - | - | ~ 1    | 0    | 57   | ~ 1    | 0    | 86   |
| Stage 1              | -      | - | - | -      | - | - | ~ 2    | 14   | -    | ~ 5    | 25   | -    |
| Stage 2              | -      | - | - | -      | - | - | 153    | 25   | -    | 121    | 14   | -    |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -    | -    | -      | -    | -    |
| Mov Cap-1 Maneuver   | 33     | - | - | ~ 17   | - | - | -      | 0    | 57   | -      | 0    | 86   |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | -      | 0    | -    | -      | 0    | -    |
| Stage 1              | -      | - | - | -      | - | - | ~ 2    | 13   | -    | ~ 5    | 0    | -    |
| Stage 2              | -      | - | - | -      | - | - | -      | 0    | -    | 90     | 13   | -    |

| Approach             | EB  | WB  | NB | SB |
|----------------------|-----|-----|----|----|
| HCM Control Delay, s | 0.1 | 7.6 |    |    |
| HCM LOS              |     |     | -  | -  |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL   | EBT | EBR | WBL      | WBT | WBR | SBLn1 | SBLn2 |
|-----------------------|-------|-------|-------|-----|-----|----------|-----|-----|-------|-------|
| Capacity (veh/h)      | -     | 57    | 33    | -   | -   | ~ 17     | -   | -   | -     | 86    |
| HCM Lane V/C Ratio    | -     | 0.21  | 0.066 | -   | -   | 1.726    | -   | -   | -     | 0.063 |
| HCM Control Delay (s) | -     | 84.2  | 121.6 | -   | -   | \$ 817.5 | -   | -   | -     | 49.7  |
| HCM Lane LOS          | -     | F     | F     | -   | -   | F        | -   | -   | -     | E     |
| HCM 95th %tile Q(veh) | -     | 0.7   | 0.2   | -   | -   | 4.2      | -   | -   | -     | 0.2   |

| Notes                      |                        |                            |                                |
|----------------------------|------------------------|----------------------------|--------------------------------|
| ~: Volume exceeds capacity | \$: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

Timings  
5: San Gorgonio Dr. & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

05/29/2019



| Lane Group           | EBL  | EBT   | WBL  | WBT   | WBR   | NBL  | NBR   | SBL  | SBR   |
|----------------------|------|-------|------|-------|-------|------|-------|------|-------|
| Lane Configurations  |      |       |      |       |       |      |       |      |       |
| Traffic Volume (vph) | 18   | 3738  | 101  | 2883  | 25    | 36   | 186   | 34   | 21    |
| Future Volume (vph)  | 18   | 3738  | 101  | 2883  | 25    | 36   | 186   | 34   | 21    |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | Prot | Perm  | Prot | Perm  |
| Protected Phases     | 5    | 2     | 1    | 6     |       | 3    |       | 7    |       |
| Permitted Phases     |      |       |      |       | 6     |      | 8     |      | 4     |
| Detector Phase       | 5    | 2     | 1    | 6     | 6     | 3    | 8     | 7    | 4     |
| Switch Phase         |      |       |      |       |       |      |       |      |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 5.0  | 10.0  | 5.0  | 10.0  |
| Minimum Split (s)    | 9.6  | 16.5  | 9.6  | 30.5  | 30.5  | 9.6  | 26.6  | 9.6  | 14.6  |
| Total Split (s)      | 9.6  | 73.0  | 10.2 | 73.6  | 73.6  | 11.2 | 27.2  | 9.6  | 25.6  |
| Total Split (%)      | 8.0% | 60.8% | 8.5% | 61.3% | 61.3% | 9.3% | 22.7% | 8.0% | 21.3% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 5.5   | 3.6  | 3.6   | 3.6  | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0  | 1.0   | 1.0  | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   |
| Total Lost Time (s)  | 4.6  | 6.5   | 4.6  | 6.5   | 6.5   | 4.6  | 4.6   | 4.6  | 4.6   |
| Lead/Lag             | Lead | Lag   | Lead | Lag   | Lag   | Lead | Lag   | Lead | Lag   |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   | Yes   | Yes  | Yes   | Yes  | Yes   |
| Recall Mode          | None | C-Max | None | None  | None  | None | None  | None | None  |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 76.7 (64%), Referenced to phase 2:EBT, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Splits and Phases: 5: San Gorgonio Dr. & Alessandro Bl.

|        |        |        |        |
|--------|--------|--------|--------|
|        |        |        |        |
| Ø1     | Ø2 (R) | Ø3     | Ø4     |
| 10.2 s | 73 s   | 11.2 s | 25.6 s |
|        |        |        |        |
| Ø5     | Ø6     | Ø7     | Ø8     |
| 9.6 s  | 73.6 s | 9.6 s  | 27.2 s |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 5: San Gorgonio Dr. & Alessandro Bl. 05/29/2019

|                              |  |                                                                                                                                                                            |  |  |                                                                                                                                                                            |  |   |  |  |  |                                                                                         |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                         | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                         | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                        | SBR                                                                                 |
| Lane Configurations          |  | <br><br> |                                                                                   |  | <br><br> |  |  |  |  |  | <br> |  |
| Traffic Volume (veh/h)       | 18                                                                                | 3738                                                                                                                                                                                                                                                        | 20                                                                                | 101                                                                               | 2883                                                                                                                                                                                                                                                        | 25                                                                                | 36                                                                                  | 0                                                                                   | 186                                                                                 | 34                                                                                  | 0                                                                                                                                                                          | 21                                                                                  |
| Future Volume (veh/h)        | 18                                                                                | 3738                                                                                                                                                                                                                                                        | 20                                                                                | 101                                                                               | 2883                                                                                                                                                                                                                                                        | 25                                                                                | 36                                                                                  | 0                                                                                   | 186                                                                                 | 34                                                                                  | 0                                                                                                                                                                          | 21                                                                                  |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.98                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                            | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                          |                                                                                   |                                                                                   | No                                                                                                                                                                                                                                                          |                                                                                   |                                                                                     | No                                                                                  |                                                                                     |                                                                                     | No                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                       | 1900                                                                                |
| Adj Flow Rate, veh/h         | 20                                                                                | 4108                                                                                                                                                                                                                                                        | 11                                                                                | 110                                                                               | 3168                                                                                                                                                                                                                                                        | 26                                                                                | 39                                                                                  | 0                                                                                   | 126                                                                                 | 37                                                                                  | 0                                                                                                                                                                          | 0                                                                                   |
| Peak Hour Factor             | 0.91                                                                              | 0.91                                                                                                                                                                                                                                                        | 0.92                                                                              | 0.92                                                                              | 0.91                                                                                                                                                                                                                                                        | 0.91                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.91                                                                                | 0.92                                                                                                                                                                       | 0.91                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   |
| Cap, veh/h                   | 37                                                                                | 3697                                                                                                                                                                                                                                                        | 10                                                                                | 84                                                                                | 3859                                                                                                                                                                                                                                                        | 1066                                                                              | 55                                                                                  | 181                                                                                 | 153                                                                                 | 69                                                                                  | 196                                                                                                                                                                        |                                                                                     |
| Arrive On Green              | 0.02                                                                              | 0.65                                                                                                                                                                                                                                                        | 0.65                                                                              | 0.05                                                                              | 0.68                                                                                                                                                                                                                                                        | 0.68                                                                              | 0.03                                                                                | 0.00                                                                                | 0.10                                                                                | 0.04                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5682                                                                                                                                                                                                                                                        | 15                                                                                | 1810                                                                              | 5700                                                                                                                                                                                                                                                        | 1575                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                                                                                                       | 1610                                                                                |
| Grp Volume(v), veh/h         | 20                                                                                | 2746                                                                                                                                                                                                                                                        | 1373                                                                              | 110                                                                               | 3168                                                                                                                                                                                                                                                        | 26                                                                                | 39                                                                                  | 0                                                                                   | 126                                                                                 | 37                                                                                  | 0                                                                                                                                                                          | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                                                                                                                                                                                                        | 1897                                                                              | 1810                                                                              | 1900                                                                                                                                                                                                                                                        | 1575                                                                              | 1810                                                                                | 1900                                                                                | 1610                                                                                | 1810                                                                                | 1900                                                                                                                                                                       | 1610                                                                                |
| Q Serve(g_s), s              | 1.3                                                                               | 78.1                                                                                                                                                                                                                                                        | 78.1                                                                              | 5.6                                                                               | 48.5                                                                                                                                                                                                                                                        | 0.7                                                                               | 2.6                                                                                 | 0.0                                                                                 | 9.2                                                                                 | 2.4                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 1.3                                                                               | 78.1                                                                                                                                                                                                                                                        | 78.1                                                                              | 5.6                                                                               | 48.5                                                                                                                                                                                                                                                        | 0.7                                                                               | 2.6                                                                                 | 0.0                                                                                 | 9.2                                                                                 | 2.4                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.01                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                            | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 37                                                                                | 2472                                                                                                                                                                                                                                                        | 1234                                                                              | 84                                                                                | 3859                                                                                                                                                                                                                                                        | 1066                                                                              | 55                                                                                  | 181                                                                                 | 153                                                                                 | 69                                                                                  | 196                                                                                                                                                                        |                                                                                     |
| V/C Ratio(X)                 | 0.55                                                                              | 1.11                                                                                                                                                                                                                                                        | 1.11                                                                              | 1.30                                                                              | 0.82                                                                                                                                                                                                                                                        | 0.02                                                                              | 0.71                                                                                | 0.00                                                                                | 0.82                                                                                | 0.53                                                                                | 0.00                                                                                                                                                                       |                                                                                     |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2472                                                                                                                                                                                                                                                        | 1234                                                                              | 84                                                                                | 3859                                                                                                                                                                                                                                                        | 1066                                                                              | 100                                                                                 | 358                                                                                 | 303                                                                                 | 75                                                                                  | 333                                                                                                                                                                        |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                        | 0.09                                                                              | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                | 1.00                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 58.2                                                                              | 21.0                                                                                                                                                                                                                                                        | 21.0                                                                              | 57.2                                                                              | 14.1                                                                                                                                                                                                                                                        | 6.4                                                                               | 57.7                                                                                | 0.0                                                                                 | 53.3                                                                                | 56.6                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 4.6                                                                               | 56.3                                                                                                                                                                                                                                                        | 62.3                                                                              | 144.0                                                                             | 0.1                                                                                                                                                                                                                                                         | 0.0                                                                               | 15.6                                                                                | 0.0                                                                                 | 10.4                                                                                | 6.2                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.6                                                                               | 46.4                                                                                                                                                                                                                                                        | 48.4                                                                              | 5.8                                                                               | 16.1                                                                                                                                                                                                                                                        | 0.2                                                                               | 1.4                                                                                 | 0.0                                                                                 | 4.2                                                                                 | 1.2                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| LnGrp Delay(d),s/veh         | 62.8                                                                              | 77.2                                                                                                                                                                                                                                                        | 83.2                                                                              | 201.2                                                                             | 14.2                                                                                                                                                                                                                                                        | 6.4                                                                               | 73.2                                                                                | 0.0                                                                                 | 63.7                                                                                | 62.9                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | F                                                                                                                                                                                                                                                           | F                                                                                 | F                                                                                 | B                                                                                                                                                                                                                                                           | A                                                                                 | E                                                                                   | A                                                                                   | E                                                                                   | E                                                                                   | A                                                                                                                                                                          |                                                                                     |
| Approach Vol, veh/h          |                                                                                   | 4139                                                                                                                                                                                                                                                        |                                                                                   |                                                                                   | 3304                                                                                                                                                                                                                                                        |                                                                                   |                                                                                     | 165                                                                                 |                                                                                     |                                                                                     | 37                                                                                                                                                                         | A                                                                                   |
| Approach Delay, s/veh        |                                                                                   | 79.2                                                                                                                                                                                                                                                        |                                                                                   |                                                                                   | 20.4                                                                                                                                                                                                                                                        |                                                                                   |                                                                                     | 65.9                                                                                |                                                                                     |                                                                                     | 62.9                                                                                                                                                                       |                                                                                     |
| Approach LOS                 |                                                                                   | E                                                                                                                                                                                                                                                           |                                                                                   |                                                                                   | C                                                                                                                                                                                                                                                           |                                                                                   |                                                                                     | E                                                                                   |                                                                                     |                                                                                     | E                                                                                                                                                                          |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                           | 3                                                                                 | 4                                                                                 | 5                                                                                                                                                                                                                                                           | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.2                                                                              | 84.6                                                                                                                                                                                                                                                        | 8.2                                                                               | 17.0                                                                              | 7.0                                                                                                                                                                                                                                                         | 87.7                                                                              | 9.2                                                                                 | 16.0                                                                                |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               | 6.5                                                                                                                                                                                                                                                         | 4.6                                                                               | 4.6                                                                               | 4.6                                                                                                                                                                                                                                                         | 6.5                                                                               | 4.6                                                                                 | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Max Green Setting (Gmax), s  | 5.6                                                                               | 66.5                                                                                                                                                                                                                                                        | 6.6                                                                               | 21.0                                                                              | 5.0                                                                                                                                                                                                                                                         | 67.1                                                                              | 5.0                                                                                 | 22.6                                                                                |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 7.6                                                                               | 80.1                                                                                                                                                                                                                                                        | 4.6                                                                               | 0.0                                                                               | 3.3                                                                                                                                                                                                                                                         | 50.5                                                                              | 4.4                                                                                 | 11.2                                                                                |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 16.3                                                                              | 0.0                                                                                 | 0.3                                                                                 |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 53.4 |
| HCM 6th LOS        | D    |

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.

05/29/2019

|                      |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 332                                                                               | 2741                                                                              | 718                                                                               | 273                                                                               | 2376                                                                              | 232                                                                               | 537                                                                                | 416                                                                                 | 295                                                                                 | 245                                                                                 | 855                                                                                 | 494                                                                                 |
| Future Volume (vph)  | 332                                                                               | 2741                                                                              | 718                                                                               | 273                                                                               | 2376                                                                              | 232                                                                               | 537                                                                                | 416                                                                                 | 295                                                                                 | 245                                                                                 | 855                                                                                 | 494                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                 |                                                                                   | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   | 6                                                                                 |                                                                                    |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     | 4                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                  | 8                                                                                   | 1                                                                                   | 7                                                                                   | 4                                                                                   | 4                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 5.0                                                                                | 10.0                                                                                | 5.0                                                                                 | 5.0                                                                                 | 10.0                                                                                | 10.0                                                                                |
| Minimum Split (s)    | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                               | 43.5                                                                              | 43.5                                                                              | 8.7                                                                                | 15.8                                                                                | 8.7                                                                                 | 8.7                                                                                 | 49.8                                                                                | 49.8                                                                                |
| Total Split (s)      | 13.0                                                                              | 47.0                                                                              | 47.0                                                                              | 10.0                                                                              | 44.0                                                                              | 44.0                                                                              | 12.0                                                                               | 50.0                                                                                | 10.0                                                                                | 13.0                                                                                | 51.0                                                                                | 51.0                                                                                |
| Total Split (%)      | 10.8%                                                                             | 39.2%                                                                             | 39.2%                                                                             | 8.3%                                                                              | 36.7%                                                                             | 36.7%                                                                             | 10.0%                                                                              | 41.7%                                                                               | 8.3%                                                                                | 10.8%                                                                               | 42.5%                                                                               | 42.5%                                                                               |
| Yellow Time (s)      | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                               | 5.5                                                                               | 5.5                                                                               | 3.2                                                                                | 4.8                                                                                 | 3.2                                                                                 | 3.2                                                                                 | 4.8                                                                                 | 4.8                                                                                 |
| All-Red Time (s)     | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                                | 1.0                                                                                 | 0.5                                                                                 | 0.5                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                               | 6.5                                                                               | 6.5                                                                               | 3.7                                                                                | 5.8                                                                                 | 3.7                                                                                 | 3.7                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lag                                                                               | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                                | Lag                                                                                 | Lead                                                                                | Lead                                                                                | Lead                                                                                | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                              | C-Max                                                                             | C-Max                                                                             | None                                                                               | Max                                                                                 | None                                                                                | None                                                                                | Max                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 120

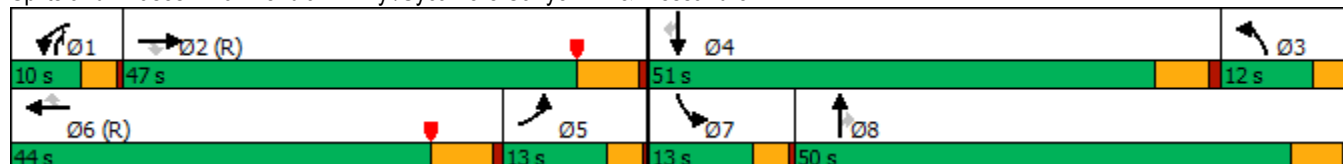
Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
6: Meridian Pkwy./Sycamore Canyon Bl. & Alessandro Bl. 05/29/2019

|                              |  |                                                                                                                                                                      |  |                                                                                    |                                                                                                                                                                      |  |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                                                                                                                 | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                     | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |  |   |    |  |   |   |   |   |   |  |
| Traffic Volume (veh/h)       | 332                                                                               | 2741                                                                                                                                                                                                                                                  | 718                                                                               | 273                                                                                                                                                                 | 2376                                                                                                                                                                                                                                                  | 232                                                                               | 537                                                                                                                                                                     | 416                                                                                                                                                                     | 295                                                                                                                                                                     | 245                                                                                                                                                                     | 855                                                                                                                                                                     | 494                                                                                 |
| Future Volume (veh/h)        | 332                                                                               | 2741                                                                                                                                                                                                                                                  | 718                                                                               | 273                                                                                                                                                                 | 2376                                                                                                                                                                                                                                                  | 232                                                                               | 537                                                                                                                                                                     | 416                                                                                                                                                                     | 295                                                                                                                                                                     | 245                                                                                                                                                                     | 855                                                                                                                                                                     | 494                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        |                                                                                   | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                     | No                                                                                                                                                                                                                                                    |                                                                                   |                                                                                                                                                                         | No                                                                                                                                                                      |                                                                                                                                                                         |                                                                                                                                                                         | No                                                                                                                                                                      |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 369                                                                               | 3046                                                                                                                                                                                                                                                  | 798                                                                               | 303                                                                                                                                                                 | 2640                                                                                                                                                                                                                                                  | 258                                                                               | 597                                                                                                                                                                     | 462                                                                                                                                                                     | 328                                                                                                                                                                     | 272                                                                                                                                                                     | 950                                                                                                                                                                     | 549                                                                                 |
| Peak Hour Factor             | 0.90                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.90                                                                              | 0.90                                                                                                                                                                | 0.90                                                                                                                                                                                                                                                  | 0.90                                                                              | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                                                                                                    | 0.90                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 2144                                                                              | 7615                                                                                                                                                                                                                                                  | 2364                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1393                                                                                                                                                                    | 1242                                                                                                                                                                    | 272                                                                                                                                                                     | 1360                                                                                                                                                                    | 606                                                                                 |
| Arrive On Green              | 0.39                                                                              | 0.48                                                                                                                                                                                                                                                  | 0.48                                                                              | 0.05                                                                                                                                                                | 0.31                                                                                                                                                                                                                                                  | 0.31                                                                              | 0.07                                                                                                                                                                    | 0.39                                                                                                                                                                    | 0.39                                                                                                                                                                    | 0.08                                                                                                                                                                    | 0.38                                                                                                                                                                    | 0.38                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                | 5187                                                                                                                                                                                                                                                  | 1610                                                                              | 3510                                                                                                                                                                    | 3610                                                                                                                                                                    | 2834                                                                                                                                                                    | 3510                                                                                                                                                                    | 3610                                                                                                                                                                    | 1610                                                                                |
| Grp Volume(v), veh/h         | 369                                                                               | 3046                                                                                                                                                                                                                                                  | 798                                                                               | 303                                                                                                                                                                 | 2640                                                                                                                                                                                                                                                  | 258                                                                               | 597                                                                                                                                                                     | 462                                                                                                                                                                     | 328                                                                                                                                                                     | 272                                                                                                                                                                     | 950                                                                                                                                                                     | 549                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                | 1729                                                                                                                                                                                                                                                  | 1610                                                                              | 1755                                                                                                                                                                    | 1805                                                                                                                                                                    | 1417                                                                                                                                                                    | 1755                                                                                                                                                                    | 1805                                                                                                                                                                    | 1610                                                                                |
| Q Serve(g_s), s              | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 6.3                                                                                                                                                                 | 37.5                                                                                                                                                                                                                                                  | 37.5                                                                              | 8.3                                                                                                                                                                     | 10.8                                                                                                                                                                    | 8.8                                                                                                                                                                     | 9.3                                                                                                                                                                     | 26.7                                                                                                                                                                    | 38.7                                                                                |
| Cycle Q Clear(g_c), s        | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 6.3                                                                                                                                                                 | 37.5                                                                                                                                                                                                                                                  | 37.5                                                                              | 8.3                                                                                                                                                                     | 10.8                                                                                                                                                                    | 8.8                                                                                                                                                                     | 9.3                                                                                                                                                                     | 26.7                                                                                                                                                                    | 38.7                                                                                |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    |                                                                                                                                                                         | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 2144                                                                              | 7615                                                                                                                                                                                                                                                  | 2364                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1393                                                                                                                                                                    | 1242                                                                                                                                                                    | 272                                                                                                                                                                     | 1360                                                                                                                                                                    | 606                                                                                 |
| V/C Ratio(X)                 | 0.17                                                                              | 0.40                                                                                                                                                                                                                                                  | 0.34                                                                              | 1.64                                                                                                                                                                | 1.63                                                                                                                                                                                                                                                  | 0.51                                                                              | 2.46                                                                                                                                                                    | 0.33                                                                                                                                                                    | 0.26                                                                                                                                                                    | 1.00                                                                                                                                                                    | 0.70                                                                                                                                                                    | 0.91                                                                                |
| Avail Cap(c_a), veh/h        | 2144                                                                              | 7615                                                                                                                                                                                                                                                  | 2364                                                                              | 184                                                                                                                                                                 | 1621                                                                                                                                                                                                                                                  | 503                                                                               | 243                                                                                                                                                                     | 1393                                                                                                                                                                    | 1242                                                                                                                                                                    | 272                                                                                                                                                                     | 1360                                                                                                                                                                    | 606                                                                                 |
| HCM Platoon Ratio            | 0.33                                                                              | 0.33                                                                                                                                                                                                                                                  | 0.33                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(I)           | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                  | 0.09                                                                              | 1.00                                                                                                                                                                | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 56.8                                                                                                                                                                | 41.2                                                                                                                                                                                                                                                  | 211.1                                                                             | 55.8                                                                                                                                                                    | 26.0                                                                                                                                                                    | 21.4                                                                                                                                                                    | 55.3                                                                                                                                                                    | 31.6                                                                                                                                                                    | 35.4                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 312.9                                                                                                                                                               | 285.8                                                                                                                                                                                                                                                 | 3.7                                                                               | 668.7                                                                                                                                                                   | 0.6                                                                                                                                                                     | 0.5                                                                                                                                                                     | 54.5                                                                                                                                                                    | 3.0                                                                                                                                                                     | 19.5                                                                                |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 10.7                                                                                                                                                                | 58.1                                                                                                                                                                                                                                                  | 16.9                                                                              | 26.1                                                                                                                                                                    | 4.6                                                                                                                                                                     | 2.9                                                                                                                                                                     | 6.1                                                                                                                                                                     | 11.7                                                                                                                                                                    | 17.6                                                                                |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 369.8                                                                                                                                                               | 327.0                                                                                                                                                                                                                                                 | 214.8                                                                             | 724.5                                                                                                                                                                   | 26.6                                                                                                                                                                    | 21.9                                                                                                                                                                    | 109.8                                                                                                                                                                   | 34.6                                                                                                                                                                    | 54.8                                                                                |
| LnGrp LOS                    | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | F                                                                                                                                                                   | F                                                                                                                                                                                                                                                     | F                                                                                 | F                                                                                                                                                                       | C                                                                                                                                                                       | C                                                                                                                                                                       | F                                                                                                                                                                       | C                                                                                                                                                                       | D                                                                                   |
| Approach Vol, veh/h          |                                                                                   | 4213                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 3201                                                                                                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         | 1387                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         | 1771                                                                                                                                                                    |                                                                                     |
| Approach Delay, s/veh        |                                                                                   | 0.0                                                                                                                                                                                                                                                   |                                                                                   |                                                                                                                                                                     | 322.0                                                                                                                                                                                                                                                 |                                                                                   |                                                                                                                                                                         | 325.9                                                                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 52.5                                                                                                                                                                    |                                                                                     |
| Approach LOS                 |                                                                                   | A                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     | F                                                                                                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         | F                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | D                                                                                                                                                                       |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                                                                                                     | 3                                                                                 | 4                                                                                                                                                                   | 5                                                                                                                                                                                                                                                     | 6                                                                                 | 7                                                                                                                                                                       | 8                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.0                                                                              | 184.8                                                                                                                                                                                                                                                 | 14.1                                                                              | 51.0                                                                                                                                                                | 150.8                                                                                                                                                                                                                                                 | 44.0                                                                              | 13.0                                                                                                                                                                    | 52.1                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 3.7                                                                               | 6.5                                                                                                                                                                                                                                                   | 5.8                                                                               | * 5.8                                                                                                                                                               | 6.5                                                                                                                                                                                                                                                   | * 6.5                                                                             | 3.7                                                                                                                                                                     | 5.8                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 6.3                                                                               | 40.5                                                                                                                                                                                                                                                  | 8.3                                                                               | * 45                                                                                                                                                                | 9.3                                                                                                                                                                                                                                                   | * 38                                                                              | 9.3                                                                                                                                                                     | 44.2                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 8.3                                                                               | 2.0                                                                                                                                                                                                                                                   | 10.3                                                                              | 40.7                                                                                                                                                                | 2.0                                                                                                                                                                                                                                                   | 39.5                                                                              | 11.3                                                                                                                                                                    | 12.8                                                                                                                                                                    |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 37.8                                                                                                                                                                                                                                                  | 0.0                                                                               | 3.0                                                                                                                                                                 | 0.3                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                                                                                                     | 4.4                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                     |

Intersection Summary

|                    |       |
|--------------------|-------|
| HCM 6th Ctrl Delay | 149.0 |
| HCM 6th LOS        | F     |

Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/28/2019



| Lane Group           | EBT   | WBT   | SBL   | SBT   | SBR   |
|----------------------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑   | ↑↑↑   | ↵     | ↵     | ↵     |
| Traffic Volume (vph) | 2614  | 2330  | 333   | 0     | 549   |
| Future Volume (vph)  | 2614  | 2330  | 333   | 0     | 549   |
| Turn Type            | NA    | NA    | Split | NA    | Perm  |
| Protected Phases     | 2     | 6     | 4     | 4     |       |
| Permitted Phases     |       |       |       |       | 4     |
| Detector Phase       | 2     | 6     | 4     | 4     | 4     |
| Switch Phase         |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Minimum Split (s)    | 10.5  | 34.5  | 10.0  | 10.0  | 10.0  |
| Total Split (s)      | 58.0  | 58.0  | 27.0  | 27.0  | 27.0  |
| Total Split (%)      | 68.2% | 68.2% | 31.8% | 31.8% | 31.8% |
| Yellow Time (s)      | 4.5   | 4.5   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 5.5   | 5.5   | 5.0   | 5.0   | 5.0   |
| Lead/Lag             |       |       |       |       |       |
| Lead-Lag Optimize?   |       |       |       |       |       |
| Recall Mode          | C-Max | C-Max | None  | None  | None  |

### Intersection Summary

Cycle Length: 85

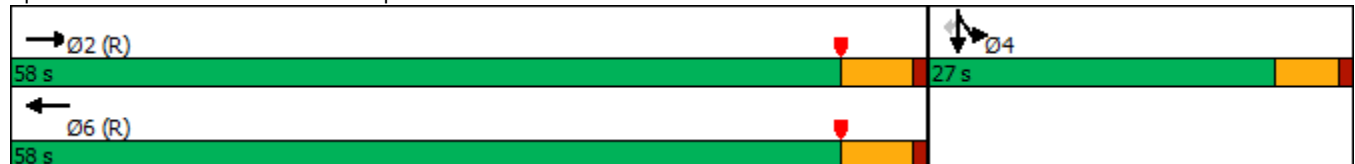
Actuated Cycle Length: 85

Offset: 33 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 7: I-215 SB Ramps & Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps & Alessandro Bl.

05/28/2019

|                                                                      |  |      |      |      |      |      |     |     |     |      |      |      |
|----------------------------------------------------------------------|------------------------------------------------------------------------------------|------|------|------|------|------|-----|-----|-----|------|------|------|
| Movement                                                             | EBL                                                                                | EBT  | EBR  | WBL  | WBT  | WBR  | NBL | NBT | NBR | SBL  | SBT  | SBR  |
| Lane Configurations                                                  |                                                                                    | ↑↑↑  |      |      | ↑↑↑  |      |     |     |     | ↖    | ↕    | ↗    |
| Traffic Volume (veh/h)                                               | 0                                                                                  | 2614 | 668  | 0    | 2330 | 183  | 0   | 0   | 0   | 333  | 0    | 549  |
| Future Volume (veh/h)                                                | 0                                                                                  | 2614 | 668  | 0    | 2330 | 183  | 0   | 0   | 0   | 333  | 0    | 549  |
| Initial Q (Qb), veh                                                  | 0                                                                                  | 0    | 0    | 0    | 0    | 0    |     |     |     | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)                                                  | 1.00                                                                               |      | 0.98 | 1.00 |      | 0.98 |     |     |     | 1.00 |      | 1.00 |
| Parking Bus, Adj                                                     | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |     |     |     | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach                                                |                                                                                    | No   |      |      | No   |      |     |     |     |      | No   |      |
| Adj Sat Flow, veh/h/ln                                               | 0                                                                                  | 1900 | 1900 | 0    | 1900 | 1900 |     |     |     | 1900 | 1900 | 1900 |
| Adj Flow Rate, veh/h                                                 | 0                                                                                  | 2781 | 674  | 0    | 2479 | 193  |     |     |     | 523  | 0    | 299  |
| Peak Hour Factor                                                     | 0.94                                                                               | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |     |     |     | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, %                                                 | 0                                                                                  | 0    | 0    | 0    | 0    | 0    |     |     |     | 0    | 0    | 0    |
| Cap, veh/h                                                           | 0                                                                                  | 2778 | 617  | 0    | 3226 | 246  |     |     |     | 792  | 0    | 352  |
| Arrive On Green                                                      | 0.00                                                                               | 0.66 | 0.66 | 0.00 | 0.66 | 0.66 |     |     |     | 0.22 | 0.00 | 0.22 |
| Sat Flow, veh/h                                                      | 0                                                                                  | 4396 | 938  | 0    | 5078 | 374  |     |     |     | 3619 | 0    | 1608 |
| Grp Volume(v), veh/h                                                 | 0                                                                                  | 2230 | 1225 | 0    | 1732 | 940  |     |     |     | 523  | 0    | 299  |
| Grp Sat Flow(s),veh/h/ln                                             | 0                                                                                  | 1729 | 1706 | 0    | 1729 | 1823 |     |     |     | 1810 | 0    | 1608 |
| Q Serve(g_s), s                                                      | 0.0                                                                                | 52.9 | 55.9 | 0.0  | 29.2 | 31.0 |     |     |     | 11.2 | 0.0  | 15.2 |
| Cycle Q Clear(g_c), s                                                | 0.0                                                                                | 52.9 | 55.9 | 0.0  | 29.2 | 31.0 |     |     |     | 11.2 | 0.0  | 15.2 |
| Prop In Lane                                                         | 0.00                                                                               |      | 0.55 | 0.00 |      | 0.21 |     |     |     | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h                                               | 0                                                                                  | 2274 | 1122 | 0    | 2274 | 1199 |     |     |     | 792  | 0    | 352  |
| V/C Ratio(X)                                                         | 0.00                                                                               | 0.98 | 1.09 | 0.00 | 0.76 | 0.78 |     |     |     | 0.66 | 0.00 | 0.85 |
| Avail Cap(c_a), veh/h                                                | 0                                                                                  | 2274 | 1122 | 0    | 2274 | 1199 |     |     |     | 937  | 0    | 416  |
| HCM Platoon Ratio                                                    | 1.00                                                                               | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |     |     |     | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)                                                   | 0.00                                                                               | 1.00 | 1.00 | 0.00 | 0.51 | 0.51 |     |     |     | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh                                             | 0.0                                                                                | 14.0 | 14.6 | 0.0  | 10.0 | 10.3 |     |     |     | 30.3 | 0.0  | 31.8 |
| Incr Delay (d2), s/veh                                               | 0.0                                                                                | 14.8 | 55.7 | 0.0  | 1.3  | 2.7  |     |     |     | 1.3  | 0.0  | 13.4 |
| Initial Q Delay(d3),s/veh                                            | 0.0                                                                                | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |     |     |     | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln                                             | 0.0                                                                                | 17.5 | 30.8 | 0.0  | 7.5  | 8.9  |     |     |     | 4.7  | 0.0  | 6.8  |
| Unsig. Movement Delay, s/veh                                         |                                                                                    |      |      |      |      |      |     |     |     |      |      |      |
| LnGrp Delay(d),s/veh                                                 | 0.0                                                                                | 28.9 | 70.3 | 0.0  | 11.3 | 13.0 |     |     |     | 31.6 | 0.0  | 45.3 |
| LnGrp LOS                                                            | A                                                                                  | C    | F    | A    | B    | B    |     |     |     | C    | A    | D    |
| Approach Vol, veh/h                                                  |                                                                                    | 3455 |      |      | 2672 |      |     |     |     |      | 822  |      |
| Approach Delay, s/veh                                                |                                                                                    | 43.6 |      |      | 11.9 |      |     |     |     |      | 36.6 |      |
| Approach LOS                                                         |                                                                                    | D    |      |      | B    |      |     |     |     |      | D    |      |
| Timer - Assigned Phs                                                 |                                                                                    | 2    |      | 4    |      | 6    |     |     |     |      |      |      |
| Phs Duration (G+Y+Rc), s                                             |                                                                                    | 61.4 |      | 23.6 |      | 61.4 |     |     |     |      |      |      |
| Change Period (Y+Rc), s                                              |                                                                                    | 5.5  |      | 5.0  |      | 5.5  |     |     |     |      |      |      |
| Max Green Setting (Gmax), s                                          |                                                                                    | 52.5 |      | 22.0 |      | 52.5 |     |     |     |      |      |      |
| Max Q Clear Time (g_c+I1), s                                         |                                                                                    | 57.9 |      | 17.2 |      | 33.0 |     |     |     |      |      |      |
| Green Ext Time (p_c), s                                              |                                                                                    | 0.0  |      | 1.4  |      | 16.2 |     |     |     |      |      |      |
| <b>Intersection Summary</b>                                          |                                                                                    |      |      |      |      |      |     |     |     |      |      |      |
| HCM 6th Ctrl Delay                                                   |                                                                                    |      | 30.6 |      |      |      |     |     |     |      |      |      |
| HCM 6th LOS                                                          |                                                                                    |      | C    |      |      |      |     |     |     |      |      |      |
| <b>Notes</b>                                                         |                                                                                    |      |      |      |      |      |     |     |     |      |      |      |
| User approved volume balancing among the lanes for turning movement. |                                                                                    |      |      |      |      |      |     |     |     |      |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/28/2019

|                      |  |                                                                                                                                                                      |                                                                                                                                                                      |  |  |                                                                                    |   |
|----------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                               | NBT                                                                                                                                                                 | NBR                                                                                 |
| Lane Configurations  |  |    |    |  |  |   |  |
| Traffic Volume (vph) | 279                                                                               | 2618                                                                                                                                                                                                                                                  | 1767                                                                                                                                                                                                                                                  | 300                                                                               | 760                                                                               | 68                                                                                                                                                                  | 382                                                                                 |
| Future Volume (vph)  | 279                                                                               | 2618                                                                                                                                                                                                                                                  | 1767                                                                                                                                                                                                                                                  | 300                                                                               | 760                                                                               | 68                                                                                                                                                                  | 382                                                                                 |
| Turn Type            | Prot                                                                              | NA                                                                                                                                                                                                                                                    | NA                                                                                                                                                                                                                                                    | Perm                                                                              | Split                                                                             | NA                                                                                                                                                                  | Perm                                                                                |
| Protected Phases     | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     |                                                                                   | 8                                                                                 | 8                                                                                                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                   |                                                                                                                                                                     | 8                                                                                   |
| Detector Phase       | 5                                                                                 | 2                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                                                     | 6                                                                                 | 8                                                                                 | 8                                                                                                                                                                   | 8                                                                                   |
| Switch Phase         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                                                                                                                                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 9.5                                                                               | 10.5                                                                                                                                                                                                                                                  | 33.5                                                                                                                                                                                                                                                  | 33.5                                                                              | 10.0                                                                              | 10.0                                                                                                                                                                | 10.0                                                                                |
| Total Split (s)      | 10.0                                                                              | 58.0                                                                                                                                                                                                                                                  | 48.0                                                                                                                                                                                                                                                  | 48.0                                                                              | 31.5                                                                              | 31.5                                                                                                                                                                | 31.5                                                                                |
| Total Split (%)      | 11.2%                                                                             | 64.8%                                                                                                                                                                                                                                                 | 53.6%                                                                                                                                                                                                                                                 | 53.6%                                                                             | 35.2%                                                                             | 35.2%                                                                                                                                                               | 35.2%                                                                               |
| Yellow Time (s)      | 3.5                                                                               | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                                                                                                                                                                                                   | 4.5                                                                               | 4.0                                                                               | 4.0                                                                                                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                                                                                                                                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                                                                                                 | 1.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 4.5                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 5.0                                                                               | 5.0                                                                                                                                                                 | 5.0                                                                                 |
| Lead/Lag             | Lead                                                                              |                                                                                                                                                                                                                                                       | Lag                                                                                                                                                                                                                                                   | Lag                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                                                                                                                                                                                       | Yes                                                                                                                                                                                                                                                   | Yes                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                     |
| Recall Mode          | None                                                                              | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                                                                                                                                                                                                 | C-Max                                                                             | Max                                                                               | Max                                                                                                                                                                 | Max                                                                                 |

### Intersection Summary

Cycle Length: 89.5

Actuated Cycle Length: 89.5

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 8: I-215 NB Ramps &amp; Alessandro Bl.



# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps & Alessandro Bl.

05/28/2019

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |   |                                                                                      |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |  |  |   |  |                                                                                     |                                                                                     |                                                                                     |
| Traffic Volume (veh/h)       | 279                                                                               | 2618                                                                                                                                                                                                                                                  | 219                                                                               | 0                                                                                 | 1767                                                                                                                                                                                                                                                  | 300                                                                               | 760                                                                                 | 68                                                                                                                                                                      | 382                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 279                                                                               | 2618                                                                                                                                                                                                                                                  | 219                                                                               | 0                                                                                 | 1767                                                                                                                                                                                                                                                  | 300                                                                               | 760                                                                                 | 68                                                                                                                                                                      | 382                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.98                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Adj Flow Rate, veh/h         | 297                                                                               | 2785                                                                                                                                                                                                                                                  | 233                                                                               | 0                                                                                 | 1880                                                                                                                                                                                                                                                  | 203                                                                               | 912                                                                                 | 0                                                                                                                                                                       | 183                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor             | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.94                                                                                | 0.94                                                                                                                                                                    | 0.94                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Cap, veh/h                   | 111                                                                               | 2874                                                                                                                                                                                                                                                  | 233                                                                               | 0                                                                                 | 2478                                                                                                                                                                                                                                                  | 753                                                                               | 1066                                                                                | 0                                                                                                                                                                       | 474                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Arrive On Green              | 0.06                                                                              | 0.59                                                                                                                                                                                                                                                  | 0.59                                                                              | 0.00                                                                              | 0.48                                                                                                                                                                                                                                                  | 0.48                                                                              | 0.29                                                                                | 0.00                                                                                                                                                                    | 0.29                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Sat Flow, veh/h              | 1810                                                                              | 4880                                                                                                                                                                                                                                                  | 396                                                                               | 0                                                                                 | 5358                                                                                                                                                                                                                                                  | 1577                                                                              | 3619                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Grp Volume(v), veh/h         | 297                                                                               | 1948                                                                                                                                                                                                                                                  | 1070                                                                              | 0                                                                                 | 1880                                                                                                                                                                                                                                                  | 203                                                                               | 912                                                                                 | 0                                                                                                                                                                       | 183                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1818                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 1577                                                                              | 1810                                                                                | 0                                                                                                                                                                       | 1610                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 5.5                                                                               | 47.7                                                                                                                                                                                                                                                  | 53.0                                                                              | 0.0                                                                               | 26.7                                                                                                                                                                                                                                                  | 6.9                                                                               | 21.4                                                                                | 0.0                                                                                                                                                                     | 8.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 5.5                                                                               | 47.7                                                                                                                                                                                                                                                  | 53.0                                                                              | 0.0                                                                               | 26.7                                                                                                                                                                                                                                                  | 6.9                                                                               | 21.4                                                                                | 0.0                                                                                                                                                                     | 8.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.22                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 111                                                                               | 2036                                                                                                                                                                                                                                                  | 1071                                                                              | 0                                                                                 | 2478                                                                                                                                                                                                                                                  | 753                                                                               | 1066                                                                                | 0                                                                                                                                                                       | 474                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 2.69                                                                              | 0.96                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 0.76                                                                                                                                                                                                                                                  | 0.27                                                                              | 0.86                                                                                | 0.00                                                                                                                                                                    | 0.39                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 111                                                                               | 2036                                                                                                                                                                                                                                                  | 1071                                                                              | 0                                                                                 | 2478                                                                                                                                                                                                                                                  | 753                                                                               | 1066                                                                                | 0                                                                                                                                                                       | 474                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                  | 0.09                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 42.3                                                                              | 17.4                                                                                                                                                                                                                                                  | 18.5                                                                              | 0.0                                                                               | 19.2                                                                                                                                                                                                                                                  | 14.1                                                                              | 29.9                                                                                | 0.0                                                                                                                                                                     | 25.3                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 760.9                                                                             | 1.6                                                                                                                                                                                                                                                   | 8.2                                                                               | 0.0                                                                               | 2.2                                                                                                                                                                                                                                                   | 0.9                                                                               | 8.8                                                                                 | 0.0                                                                                                                                                                     | 2.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 25.7                                                                              | 14.4                                                                                                                                                                                                                                                  | 18.7                                                                              | 0.0                                                                               | 9.4                                                                                                                                                                                                                                                   | 2.3                                                                               | 9.9                                                                                 | 0.0                                                                                                                                                                     | 3.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 803.2                                                                             | 19.0                                                                                                                                                                                                                                                  | 26.7                                                                              | 0.0                                                                               | 21.5                                                                                                                                                                                                                                                  | 15.0                                                                              | 38.8                                                                                | 0.0                                                                                                                                                                     | 27.6                                                                                |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | F                                                                                 | B                                                                                                                                                                                                                                                     | C                                                                                 | A                                                                                 | C                                                                                                                                                                                                                                                     | B                                                                                 | D                                                                                   | A                                                                                                                                                                       | C                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 3315                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2083                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 1095                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 91.8                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 20.8                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 36.9                                                                                |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | F                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | D                                                                                   |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                   |                                                                                                                                                                         |                                                                                     | 8                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 58.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 10.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 48.5                                                                                |                                                                                                                                                                         |                                                                                     | 31.5                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                                 |                                                                                                                                                                         |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 52.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 42.5                                                                                |                                                                                                                                                                         |                                                                                     | 26.5                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 55.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 7.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 28.7                                                                                |                                                                                                                                                                         |                                                                                     | 23.4                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 9.9                                                                                 |                                                                                                                                                                         |                                                                                     | 1.4                                                                                 |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 59.8                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | E                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**APPENDIX 7.3:**

**HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT  
ANALYSIS WORKSHEETS**

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### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Horizon Year (2040) Without Project Conditions - Weekday PM Peak Hour**

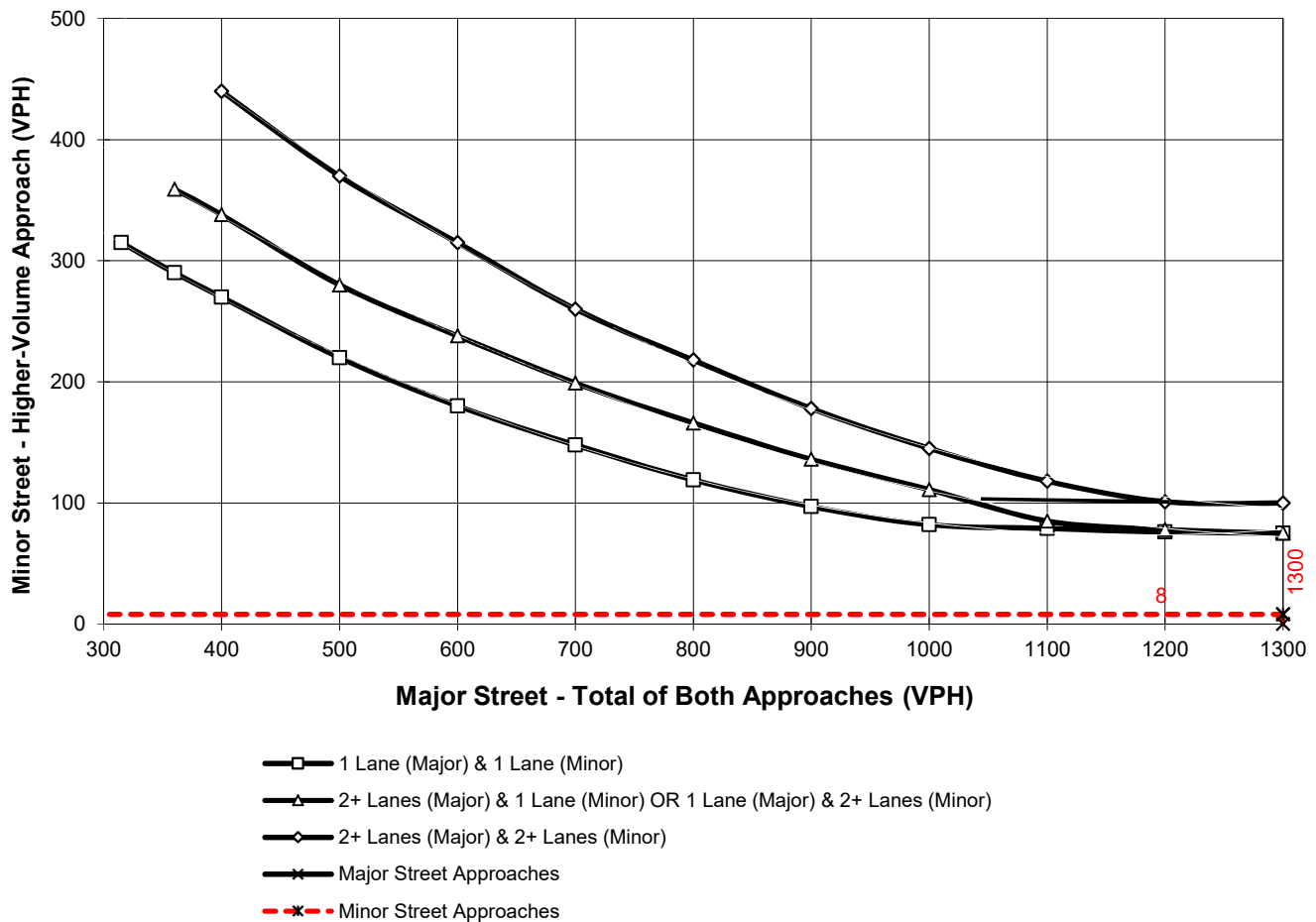
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **6220**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Private Driveway**

High Volume Approach (VPH) = **8**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes  
and 75 vph applies as the lower threshold for a minor-street approach with one lane

### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Horizon Year (2040) Without Project Conditions - Weekday PM Peak Hour**

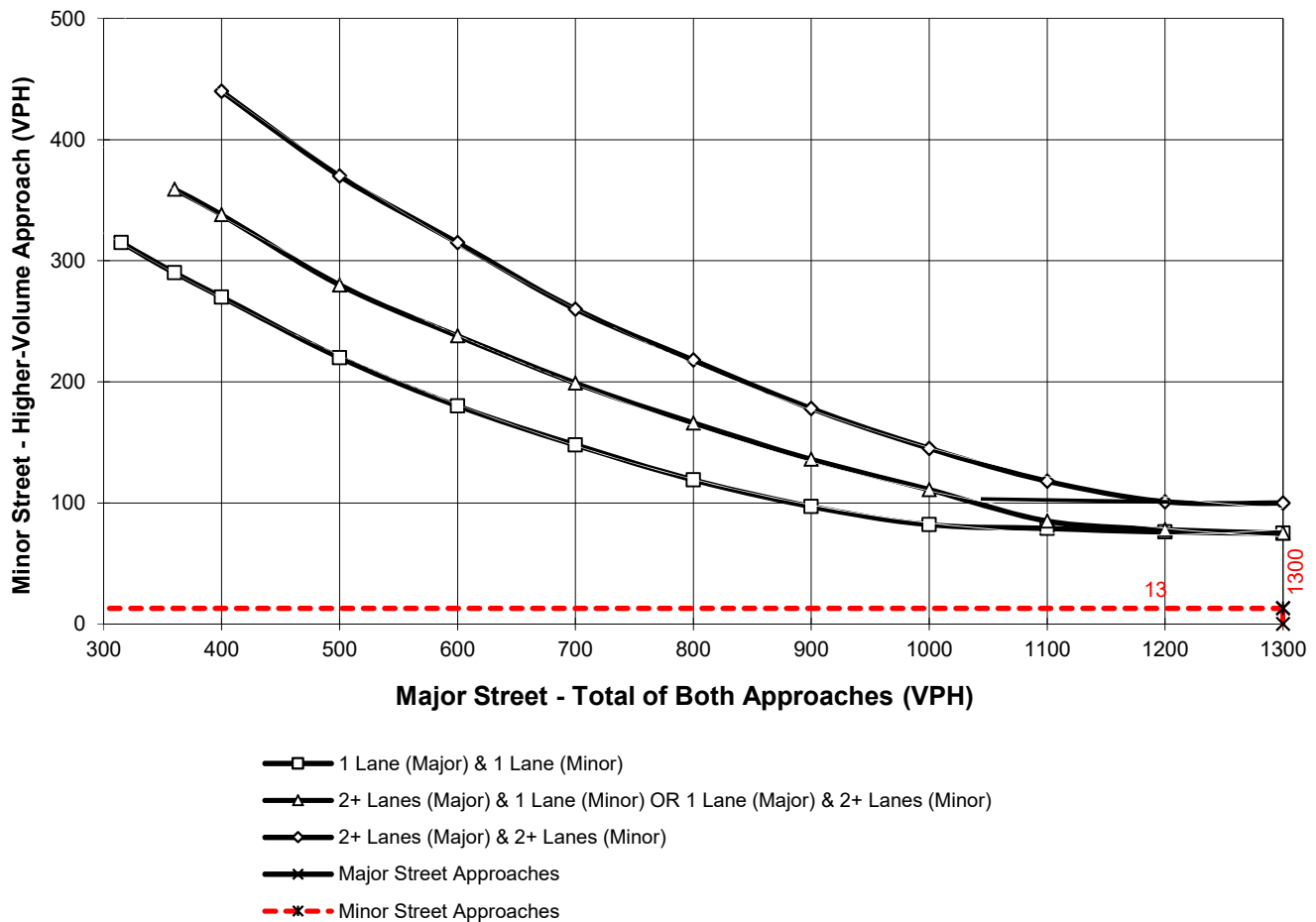
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **6258**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Vista Grande**

High Volume Approach (VPH) = **13**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes  
and 75 vph applies as the lower threshold for a minor-street approach with one lane

**APPENDIX 7.4:**

**HORIZON YEAR (2040) WITH PROJECT CONDITIONS TRAFFIC SIGNAL WARRANT  
ANALYSIS WORKSHEETS**

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### Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

|                                                                                 |    |     |    |                                            |                                               |                  |
|---------------------------------------------------------------------------------|----|-----|----|--------------------------------------------|-----------------------------------------------|------------------|
| DIST                                                                            | CO | RTE | PM | CALC                                       | TRAFFIC CONDITIONS                            | 2040 WP          |
| Jurisdiction: <u>City of Riverside</u>                                          |    |     |    | CHK <u>RV</u>                              | DATE <u>05/23/19</u>                          |                  |
| Major Street: <u>Barton Street</u>                                              |    |     |    |                                            | DATE <u>05/23/19</u>                          |                  |
| Minor Street: <u>Driveway 1</u>                                                 |    |     |    |                                            | Critical Approach Speed (Major) <u>55</u> mph |                  |
|                                                                                 |    |     |    |                                            | Critical Approach Speed (Minor) <u>25</u> mph |                  |
| Major Street Approach Lanes = <u>1</u> lane                                     |    |     |    | Minor Street Approach Lanes: <u>1</u> lane |                                               |                  |
| Major Street Future ADT = <u>793</u> vpd                                        |    |     |    | Minor Street Future ADT = <u>209</u> vpd   |                                               |                  |
| Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ..... |    |     |    |                                            | <input checked="" type="checkbox"/>           |                  |
|                                                                                 |    |     |    |                                            | or                                            | <b>RURAL (R)</b> |
| In built up area of isolated community of < 10,000 population .....             |    |     |    |                                            | <input type="checkbox"/>                      |                  |

**(Based on Estimated Average Daily Traffic - See Note)**

| URBAN                                                                               |  | RURAL                                               |           | Minimum Requirements<br>EADT                                      |        |                                                                                       |       |
|-------------------------------------------------------------------------------------|--|-----------------------------------------------------|-----------|-------------------------------------------------------------------|--------|---------------------------------------------------------------------------------------|-------|
| <b>CONDITION A - Minimum Vehicular Volume</b>                                       |  | <b>XX</b>                                           |           | Vehicles Per Day on<br>Major Street<br>(Total of Both Approaches) |        | Vehicles Per Day<br>on Higher-Volume<br>Minor Street Approach<br>(One Direction Only) |       |
| <u>Satisfied</u>                                                                    |  | <u>Not Satisfied</u>                                | <b>XX</b> |                                                                   |        |                                                                                       |       |
| Number of lanes for moving traffic on each approach                                 |  | Number of lanes for moving traffic on each approach |           | Urban                                                             | Rural  | Urban                                                                                 | Rural |
| Major Street                                                                        |  | Minor Street                                        |           |                                                                   |        |                                                                                       |       |
| 1 793                                                                               |  | 1 209                                               |           | 8,000                                                             | 5,600  | 2,400                                                                                 | 1,680 |
| 2 +                                                                                 |  | 1                                                   |           | 9,600                                                             | 6,720  | 2,400                                                                                 | 1,680 |
| 2 +                                                                                 |  | 2 +                                                 |           | 9,600                                                             | 6,720  | 3,200                                                                                 | 2,240 |
| 1                                                                                   |  | 2 +                                                 |           | 8,000                                                             | 5,600  | 3,200                                                                                 | 2,240 |
| <b>CONDITION B - Interruption of Continuous Traffic</b>                             |  | <b>XX</b>                                           |           | Vehicles Per Day<br>on Major Street<br>(Total of Both Approaches) |        | Vehicles Per Day<br>on Higher-Volume<br>Minor Street Approach<br>(One Direction Only) |       |
| <u>Satisfied</u>                                                                    |  | <u>Not Satisfied</u>                                | <b>XX</b> |                                                                   |        |                                                                                       |       |
| Number of lanes for moving traffic on each approach                                 |  | Number of lanes for moving traffic on each approach |           | Urban                                                             | Rural  | Urban                                                                                 | Rural |
| Major Street                                                                        |  | Minor Street                                        |           |                                                                   |        |                                                                                       |       |
| 1 793                                                                               |  | 1 209                                               |           | 12,000                                                            | 8,400  | 1,200                                                                                 | 850   |
| 2 +                                                                                 |  | 1                                                   |           | 14,400                                                            | 10,080 | 1,200                                                                                 | 850   |
| 2 +                                                                                 |  | 2 +                                                 |           | 14,400                                                            | 10,080 | 1,600                                                                                 | 1,120 |
| 1                                                                                   |  | 2 +                                                 |           | 12,000                                                            | 8,400  | 1,600                                                                                 | 1,120 |
| <b>Combination of CONDITIONS A + B</b>                                              |  | <b>XX</b>                                           |           | 2 CONDITIONS<br>80%                                               |        | 2 CONDITIONS<br>80%                                                                   |       |
| <u>Satisfied</u>                                                                    |  | <u>Not Satisfied</u>                                | <b>XX</b> |                                                                   |        |                                                                                       |       |
| No one condition satisfied, but following conditions<br>fulfilled 80% of more ..... |  |                                                     |           |                                                                   |        |                                                                                       |       |
|                                                                                     |  | <b>A</b>                                            | <b>B</b>  |                                                                   |        |                                                                                       |       |
|                                                                                     |  | <b>12%</b>                                          | <b>9%</b> |                                                                   |        |                                                                                       |       |

**Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.**

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Horizon Year (2040) With Project Conditions - Weekday PM Peak Hour**

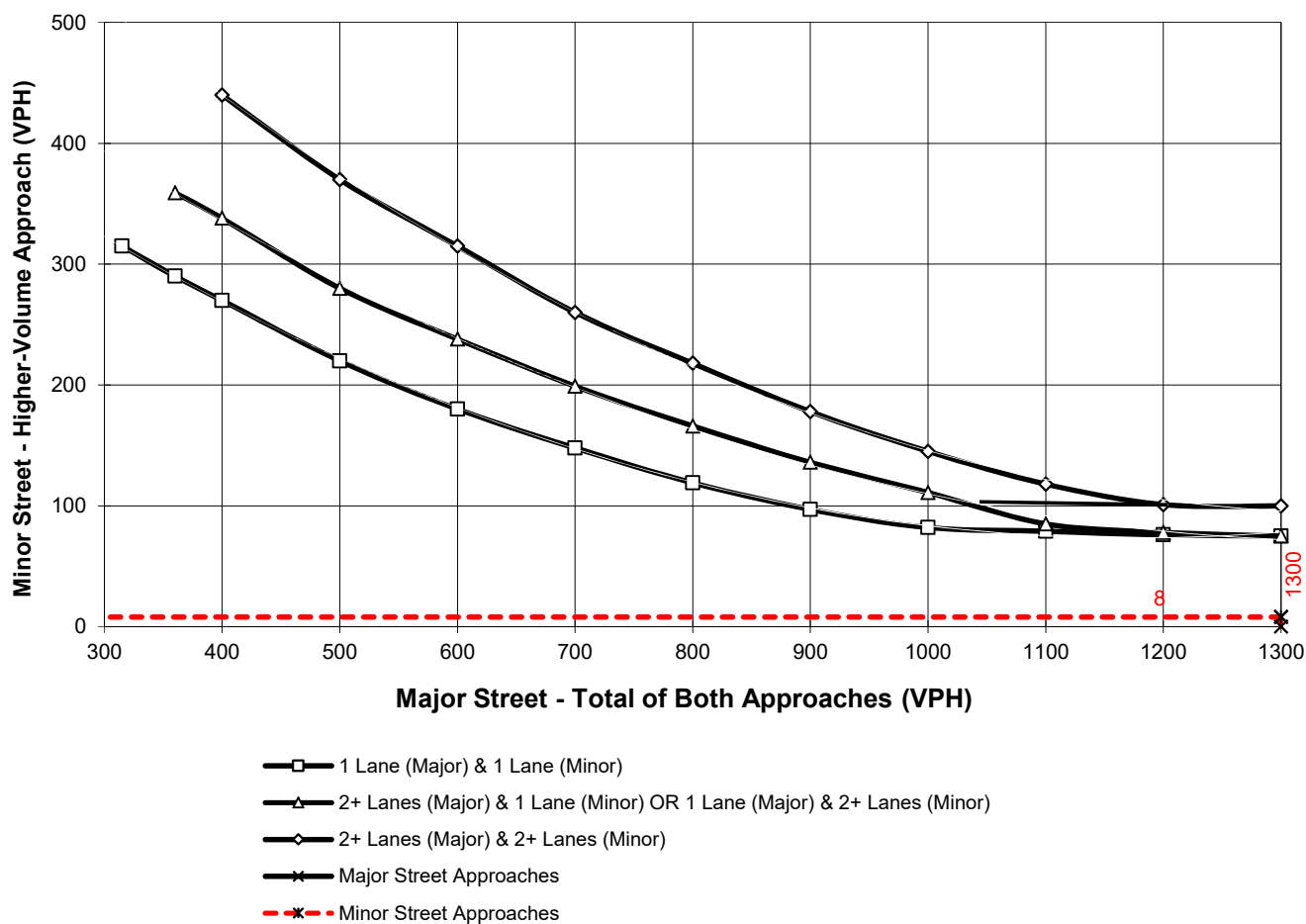
Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **6253**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Private Driveway**

High Volume Approach (VPH) = **8**  
Number of Approach Lanes Minor Street = **1**

#### SIGNAL WARRANT NOT SATISFIED



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

### Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

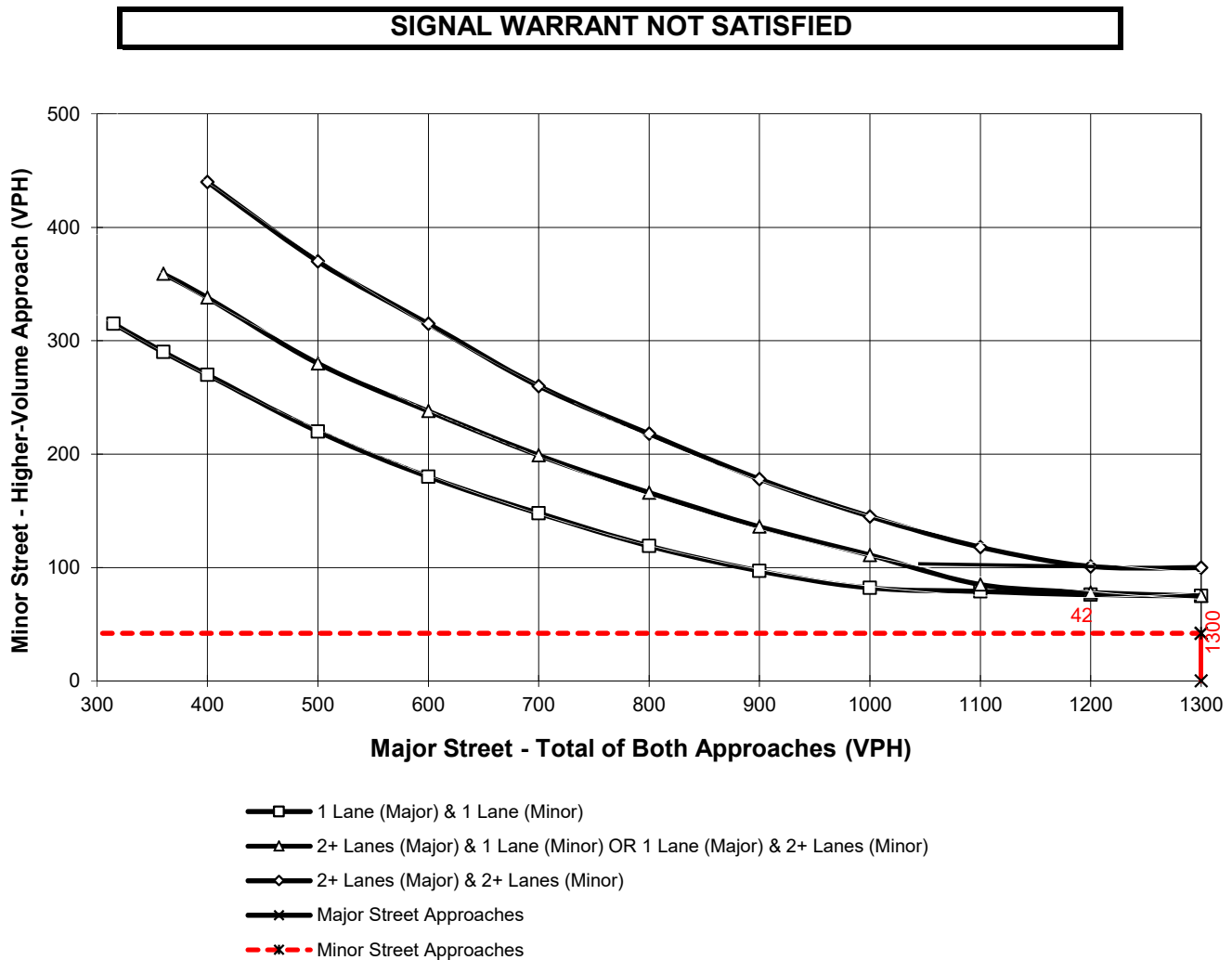
Traffic Conditions = **Horizon Year (2040) With Project Conditions - Weekday PM Peak Hour**

Major Street Name = **Alessandro Bl.**

Total of Both Approaches (VPH) = **6302**  
Number of Approach Lanes Major Street = **4**

Minor Street Name = **Vista Grande**

High Volume Approach (VPH) = **42**  
Number of Approach Lanes Minor Street = **1**



\*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes  
and 75 vph applies as the lower threshold for a minor-street approach with one lane

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**APPENDIX 7.5:**

**HORIZON YEAR (2040) WITHOUT PROJECT CONDITIONS OFF-RAMP QUEUING  
ANALYSIS WORKSHEETS**

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## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/28/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 2056 | 3700 | 325  | 320  | 321  |
| v/c Ratio               | 0.60 | 1.06 | 0.95 | 1.00 | 0.98 |
| Control Delay           | 7.4  | 40.3 | 73.0 | 83.7 | 77.7 |
| Queue Delay             | 0.0  | 0.9  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 7.4  | 41.2 | 73.0 | 83.7 | 77.7 |
| Queue Length 50th (ft)  | 167  | ~784 | 182  | 172  | 164  |
| Queue Length 95th (ft)  | 204  | m157 | #349 | #360 | #341 |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3432 | 3475 | 343  | 320  | 328  |
| Starvation Cap Reductn  | 0    | 7    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.60 | 1.07 | 0.95 | 1.00 | 0.98 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/28/2019



| Lane Group              | EBL   | EBT  | WBT   | WBR  | NBL  | NBT  | NBR  |
|-------------------------|-------|------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 93    | 1839 | 2538  | 215  | 630  | 623  | 252  |
| v/c Ratio               | 0.80  | 0.70 | 1.24  | 0.29 | 1.01 | 1.04 | 0.40 |
| Control Delay           | 72.8  | 15.3 | 139.2 | 5.5  | 67.1 | 75.3 | 13.8 |
| Queue Delay             | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 72.8  | 15.3 | 139.2 | 5.5  | 67.1 | 75.3 | 13.8 |
| Queue Length 50th (ft)  | 49    | 292  | ~624  | 12   | ~353 | ~397 | 57   |
| Queue Length 95th (ft)  | m#103 | m337 | #720  | 55   | #588 | #624 | 123  |
| Internal Link Dist (ft) |       | 688  | 486   |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200   |      |       |      | 400  |      | 400  |
| Base Capacity (vph)     | 116   | 2641 | 2044  | 729  | 625  | 601  | 624  |
| Starvation Cap Reductn  | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.80  | 0.70 | 1.24  | 0.29 | 1.01 | 1.04 | 0.40 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/28/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 3435 | 2661 | 319  | 303  | 303  |
| v/c Ratio               | 1.05 | 0.81 | 0.80 | 0.83 | 0.80 |
| Control Delay           | 48.1 | 14.1 | 46.3 | 46.8 | 44.2 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 48.1 | 14.1 | 46.3 | 46.8 | 44.2 |
| Queue Length 50th (ft)  | ~759 | 368  | 163  | 146  | 138  |
| Queue Length 95th (ft)  | #853 | 443  | #281 | #279 | #261 |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3270 | 3305 | 443  | 404  | 415  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.05 | 0.81 | 0.72 | 0.75 | 0.73 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/28/2019



| Lane Group              | EBL   | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|-------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 268   | 3013 | 1878 | 319  | 455  | 457  | 365  |
| v/c Ratio               | 2.44  | 1.06 | 0.82 | 0.36 | 0.81 | 0.84 | 0.65 |
| Control Delay           | 694.6 | 57.1 | 25.7 | 3.1  | 40.3 | 44.0 | 25.7 |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 694.6 | 57.1 | 25.7 | 3.1  | 40.3 | 44.0 | 25.7 |
| Queue Length 50th (ft)  | ~253  | ~692 | 330  | 0    | 244  | 260  | 140  |
| Queue Length 95th (ft)  | #403  | #787 | 394  | 45   | #409 | #446 | 244  |
| Internal Link Dist (ft) |       | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200   |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 110   | 2840 | 2289 | 875  | 565  | 542  | 562  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 2.44  | 1.06 | 0.82 | 0.36 | 0.81 | 0.84 | 0.65 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

**APPENDIX 7.6:**

**HORIZON YEAR (2040) WITH PROJECT CONDITIONS OFF-RAMP QUEUING ANALYSIS  
WORKSHEETS**

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| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 2072 | 3724 | 325  | 333  | 335  |
| v/c Ratio               | 0.60 | 1.07 | 0.95 | 1.04 | 1.02 |
| Control Delay           | 7.5  | 43.4 | 73.0 | 94.1 | 88.4 |
| Queue Delay             | 0.0  | 0.9  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 7.5  | 44.3 | 73.0 | 94.1 | 88.4 |
| Queue Length 50th (ft)  | 169  | ~795 | 182  | ~197 | ~180 |
| Queue Length 95th (ft)  | 207  | m154 | #349 | #378 | #360 |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3432 | 3475 | 343  | 320  | 328  |
| Starvation Cap Reductn  | 0    | 7    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.60 | 1.07 | 0.95 | 1.04 | 1.02 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/28/2019



| Lane Group              | EBL   | EBT  | WBT   | WBR  | NBL  | NBT  | NBR  |
|-------------------------|-------|------|-------|------|------|------|------|
| Lane Group Flow (vph)   | 101   | 1840 | 2542  | 215  | 641  | 632  | 252  |
| v/c Ratio               | 0.87  | 0.70 | 1.24  | 0.29 | 1.03 | 1.05 | 0.40 |
| Control Delay           | 84.3  | 15.3 | 140.0 | 5.5  | 71.6 | 79.7 | 13.8 |
| Queue Delay             | 0.0   | 0.0  | 0.3   | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 84.3  | 15.3 | 140.3 | 5.5  | 71.6 | 79.7 | 13.8 |
| Queue Length 50th (ft)  | 54    | 293  | ~626  | 12   | ~389 | ~409 | 57   |
| Queue Length 95th (ft)  | m#117 | m337 | #722  | 55   | #602 | #636 | 123  |
| Internal Link Dist (ft) |       | 688  | 486   |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200   |      |       |      | 400  |      | 400  |
| Base Capacity (vph)     | 116   | 2641 | 2044  | 729  | 625  | 601  | 624  |
| Starvation Cap Reductn  | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 183   | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.87  | 0.70 | 1.37  | 0.29 | 1.03 | 1.05 | 0.40 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 7: I-215 SB Ramps &amp; Alessandro Bl.

05/28/2019



| Lane Group              | EBT  | WBT  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 3492 | 2674 | 319  | 309  | 310  |
| v/c Ratio               | 1.07 | 0.81 | 0.79 | 0.83 | 0.81 |
| Control Delay           | 57.0 | 14.4 | 45.2 | 47.4 | 45.0 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 57.0 | 14.4 | 45.2 | 47.4 | 45.0 |
| Queue Length 50th (ft)  | ~783 | 372  | 163  | 150  | 144  |
| Queue Length 95th (ft)  | #877 | 447  | #281 | #287 | #270 |
| Internal Link Dist (ft) | 673  | 688  |      | 1585 |      |
| Turn Bay Length (ft)    |      |      | 525  |      | 525  |
| Base Capacity (vph)     | 3254 | 3290 | 443  | 404  | 415  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.07 | 0.81 | 0.72 | 0.76 | 0.75 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

## Queues

## Sycamore Hills Distribution Center TIA (JN 12014)

## 8: I-215 NB Ramps &amp; Alessandro Bl.

05/28/2019



| Lane Group              | EBL   | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  |
|-------------------------|-------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 297   | 3018 | 1880 | 319  | 461  | 461  | 365  |
| v/c Ratio               | 2.70  | 1.00 | 0.76 | 0.35 | 0.91 | 0.95 | 0.71 |
| Control Delay           | 809.9 | 36.2 | 21.9 | 2.8  | 54.9 | 62.1 | 30.1 |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 809.9 | 36.2 | 21.9 | 2.8  | 54.9 | 62.1 | 30.1 |
| Queue Length 50th (ft)  | ~287  | ~579 | 307  | 0    | 263  | 278  | 148  |
| Queue Length 95th (ft)  | #444  | #750 | 368  | 42   | #453 | #490 | 257  |
| Internal Link Dist (ft) |       | 688  | 486  |      |      | 1005 |      |
| Turn Bay Length (ft)    | 200   |      |      |      | 400  |      | 400  |
| Base Capacity (vph)     | 110   | 3011 | 2463 | 918  | 507  | 487  | 514  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 2.70  | 1.00 | 0.76 | 0.35 | 0.91 | 0.95 | 0.71 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

**APPENDIX 7.7:**

**HORIZON YEAR (2040) WITH PROJECT CONDITIONS INTERSECTION OPERATIONS  
ANALYSIS WORKSHEETS WITH IMPROVEMENTS**

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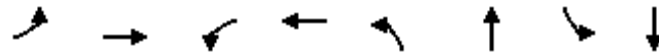
| Intersection               |        |                        |      |        |                            |       |        |      |                                |        |      |      |
|----------------------------|--------|------------------------|------|--------|----------------------------|-------|--------|------|--------------------------------|--------|------|------|
| Int Delay, s/veh           | 0      |                        |      |        |                            |       |        |      |                                |        |      |      |
| Movement                   | EBL    | EBT                    | EBR  | WBL    | WBT                        | WBR   | NBL    | NBT  | NBR                            | SBL    | SBT  | SBR  |
| Lane Configurations        | ↑↑↑    |                        |      | ↑↑↑    |                            |       | ↗      |      |                                | ↗      |      |      |
| Traffic Vol, veh/h         | 0      | 1886                   | 8    | 0      | 3448                       | 0     | 0      | 0    | 7                              | 0      | 0    | 0    |
| Future Vol, veh/h          | 0      | 1886                   | 8    | 0      | 3448                       | 0     | 0      | 0    | 7                              | 0      | 0    | 0    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0    | 0      | 0                          | 0     | 0      | 0    | 0                              | 0      | 0    | 0    |
| Sign Control               | Free   | Free                   | Free | Free   | Free                       | Free  | Stop   | Stop | Stop                           | Stop   | Stop | Stop |
| RT Channelized             | -      | -                      | None | -      | -                          | None  | -      | -    | None                           | -      | -    | None |
| Storage Length             | -      | -                      | -    | -      | -                          | -     | -      | -    | 0                              | -      | -    | 0    |
| Veh in Median Storage, #   | -      | 0                      | -    | -      | 0                          | -     | -      | 0    | -                              | -      | 0    | -    |
| Grade, %                   | -      | 0                      | -    | -      | 0                          | -     | -      | 0    | -                              | -      | 0    | -    |
| Peak Hour Factor           | 92     | 92                     | 92   | 92     | 92                         | 92    | 92     | 92   | 92                             | 92     | 92   | 92   |
| Heavy Vehicles, %          | 0      | 0                      | 0    | 0      | 0                          | 0     | 0      | 0    | 0                              | 0      | 0    | 0    |
| Mvmt Flow                  | 0      | 2050                   | 9    | 0      | 3748                       | 0     | 0      | 0    | 8                              | 0      | 0    | 0    |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Major/Minor                | Major1 |                        |      | Major2 |                            |       | Minor1 |      |                                | Minor2 |      |      |
| Conflicting Flow All       | -      | 0                      | 0    | -      | -                          | 0     | -      | -    | 1030                           | -      | -    | 1874 |
| Stage 1                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 2                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Critical Hdwy              | -      | -                      | -    | -      | -                          | -     | -      | -    | 7.1                            | -      | -    | 7.1  |
| Critical Hdwy Stg 1        | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Critical Hdwy Stg 2        | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Follow-up Hdwy             | -      | -                      | -    | -      | -                          | -     | -      | -    | 3.9                            | -      | -    | 3.9  |
| Pot Cap-1 Maneuver         | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | *488                           | 0      | 0    | *122 |
| Stage 1                    | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | -                              | 0      | 0    | -    |
| Stage 2                    | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | -                              | 0      | 0    | -    |
| Platoon blocked, %         | -      | -                      | -    | -      | -                          | -     | -      | -    | 1                              | -      | -    | 1    |
| Mov Cap-1 Maneuver         | -      | -                      | -    | -      | -                          | -     | -      | -    | *488                           | -      | -    | *122 |
| Mov Cap-2 Maneuver         | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 1                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 2                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Approach                   | EB     |                        |      | WB     |                            |       | NB     |      |                                | SB     |      |      |
| HCM Control Delay, s       | 0      |                        |      | 0      |                            |       | 12.5   |      |                                | 0      |      |      |
| HCM LOS                    |        |                        |      |        |                            |       | B      |      |                                | A      |      |      |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Minor Lane/Major Mvmt      | NBLn1  | EBT                    | EBR  | WBT    | WBR                        | SBLn1 |        |      |                                |        |      |      |
| Capacity (veh/h)           | 488    | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| HCM Lane V/C Ratio         | 0.016  | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| HCM Control Delay (s)      | 12.5   | -                      | -    | -      | -                          | 0     |        |      |                                |        |      |      |
| HCM Lane LOS               | B      | -                      | -    | -      | -                          | A     |        |      |                                |        |      |      |
| HCM 95th %tile Q(veh)      | 0      | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| Notes                      |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |      |        | +: Computation Not Defined |       |        |      | *: All major volume in platoon |        |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/10/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 4    | 1889  | 14   | 3447  | 4     | 0     | 11    | 0     |
| Future Volume (vph)  | 4    | 1889  | 14   | 3447  | 4     | 0     | 11    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.2  | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 9.6  | 93.6  | 9.4  | 93.4  | 17.0  | 17.0  | 17.0  | 17.0  |
| Total Split (%)      | 8.0% | 78.0% | 7.8% | 77.8% | 14.2% | 14.2% | 14.2% | 14.2% |
| Yellow Time (s)      | 3.2  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.2  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag  | Lead  | Lag  | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.

|      |        |       |
|------|--------|-------|
| Ø2   | Ø4 (R) | Ø3    |
| 17 s | 93.6 s | 9.4 s |
| Ø6   | Ø8 (R) | Ø7    |
| 17 s | 93.4 s | 9.6 s |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/10/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 1889                                                                              | 8                                                                                 | 14                                                                                | 3447                                                                              | 35                                                                                | 4                                                                                  | 0                                                                                   | 17                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1889                                                                              | 8                                                                                 | 14                                                                                | 3447                                                                              | 35                                                                                | 4                                                                                  | 0                                                                                   | 17                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 2053                                                                              | 9                                                                                 | 15                                                                                | 3747                                                                              | 38                                                                                | 4                                                                                  | 0                                                                                   | 18                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 165                                                                               | 3869                                                                              | 17                                                                                | 162                                                                               | 3834                                                                              | 39                                                                                | 44                                                                                 | 9                                                                                   | 76                                                                                  | 146                                                                                 | 0                                                                                   | 92                                                                                  |
| Arrive On Green              | 0.18                                                                              | 1.00                                                                              | 1.00                                                                              | 0.09                                                                              | 0.72                                                                              | 0.72                                                                              | 0.06                                                                               | 0.00                                                                                | 0.06                                                                                | 0.06                                                                                | 0.00                                                                                | 0.06                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5330                                                                              | 23                                                                                | 1810                                                                              | 5295                                                                              | 54                                                                                | 145                                                                                | 149                                                                                 | 1322                                                                                | 1417                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 1332                                                                              | 730                                                                               | 15                                                                                | 2443                                                                              | 1342                                                                              | 22                                                                                 | 0                                                                                   | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1896                                                                              | 1810                                                                              | 1729                                                                              | 1890                                                                              | 1616                                                                               | 0                                                                                   | 0                                                                                   | 1417                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                               | 79.6                                                                              | 81.0                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                               | 79.6                                                                              | 81.0                                                                              | 1.5                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.03                                                                              | 0.18                                                                               |                                                                                     | 0.82                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 165                                                                               | 2510                                                                              | 1376                                                                              | 162                                                                               | 2504                                                                              | 1369                                                                              | 128                                                                                | 0                                                                                   | 0                                                                                   | 146                                                                                 | 0                                                                                   | 92                                                                                  |
| V/C Ratio(X)                 | 0.02                                                                              | 0.53                                                                              | 0.53                                                                              | 0.09                                                                              | 0.98                                                                              | 0.98                                                                              | 0.17                                                                               | 0.00                                                                                | 0.00                                                                                | 0.08                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 165                                                                               | 2510                                                                              | 1376                                                                              | 162                                                                               | 2504                                                                              | 1369                                                                              | 201                                                                                | 0                                                                                   | 0                                                                                   | 211                                                                                 | 0                                                                                   | 166                                                                                 |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                              | 2.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.09                                                                              | 0.09                                                                              | 0.09                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 44.7                                                                              | 0.0                                                                               | 0.0                                                                               | 50.2                                                                              | 15.5                                                                              | 15.7                                                                              | 54.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 53.7                                                                                | 0.0                                                                                 | 53.3                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 0.8                                                                               | 1.5                                                                               | 0.0                                                                               | 2.2                                                                               | 4.1                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.3                                                                               | 0.6                                                                               | 0.4                                                                               | 22.3                                                                              | 25.6                                                                              | 0.7                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 44.7                                                                              | 0.8                                                                               | 1.5                                                                               | 50.2                                                                              | 17.7                                                                              | 19.8                                                                              | 54.7                                                                               | 0.0                                                                                 | 0.0                                                                                 | 53.9                                                                                | 0.0                                                                                 | 53.4                                                                                |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | D                                                                                 | B                                                                                 | B                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2066                                                                              |                                                                                   |                                                                                   |                                                                                   | 3800                                                                              |                                                                                   | 22                                                                                 |                                                                                     |                                                                                     |                                                                                     | 13                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 1.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 18.6                                                                              |                                                                                   | 54.7                                                                               |                                                                                     |                                                                                     |                                                                                     | 53.9                                                                                |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |                                                                                   | D                                                                                  |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                  |                                                                                     | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.5                                                                              |                                                                                   | 14.9                                                                              |                                                                                   | 93.6                                                                              |                                                                                   | 11.5                                                                               |                                                                                     | 15.1                                                                                |                                                                                     | 93.4                                                                                |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.2                                                                               |                                                                                   | * 6.5                                                                             |                                                                                   | 4.6                                                                                |                                                                                     | 4.2                                                                                 |                                                                                     | * 6.5                                                                               |                                                                                     |
| Max Green Setting (Gmax), s  | 12.4                                                                              |                                                                                   | 5.2                                                                               |                                                                                   | * 87                                                                              |                                                                                   | 12.4                                                                               |                                                                                     | 5.4                                                                                 |                                                                                     | * 87                                                                                |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.5                                                                               |                                                                                   | 2.9                                                                               |                                                                                   | 2.0                                                                               |                                                                                   | 2.8                                                                                |                                                                                     | 2.2                                                                                 |                                                                                     | 83.0                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 24.3                                                                              |                                                                                   | 0.0                                                                                |                                                                                     | 0.0                                                                                 |                                                                                     | 3.8                                                                                 |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 12.7                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

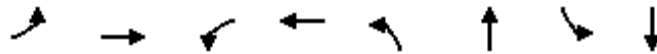
| Intersection               |        |                        |      |        |                            |       |        |      |                                |        |      |      |
|----------------------------|--------|------------------------|------|--------|----------------------------|-------|--------|------|--------------------------------|--------|------|------|
| Int Delay, s/veh           | 0      |                        |      |        |                            |       |        |      |                                |        |      |      |
| Movement                   | EBL    | EBT                    | EBR  | WBL    | WBT                        | WBR   | NBL    | NBT  | NBR                            | SBL    | SBT  | SBR  |
| Lane Configurations        | ↑↑↑    |                        |      | ↑↑↑    |                            |       | ↗      |      |                                | ↗      |      |      |
| Traffic Vol, veh/h         | 0      | 3365                   | 5    | 0      | 2879                       | 0     | 0      | 0    | 8                              | 0      | 0    | 0    |
| Future Vol, veh/h          | 0      | 3365                   | 5    | 0      | 2879                       | 0     | 0      | 0    | 8                              | 0      | 0    | 0    |
| Conflicting Peds, #/hr     | 0      | 0                      | 0    | 0      | 0                          | 0     | 0      | 0    | 0                              | 0      | 0    | 0    |
| Sign Control               | Free   | Free                   | Free | Free   | Free                       | Free  | Stop   | Stop | Stop                           | Stop   | Stop | Stop |
| RT Channelized             | -      | -                      | None | -      | -                          | None  | -      | -    | None                           | -      | -    | None |
| Storage Length             | -      | -                      | -    | -      | -                          | -     | -      | -    | 0                              | -      | -    | 0    |
| Veh in Median Storage, #   | -      | 0                      | -    | -      | 0                          | -     | -      | 1    | -                              | -      | 1    | -    |
| Grade, %                   | -      | 0                      | -    | -      | 0                          | -     | -      | 0    | -                              | -      | 0    | -    |
| Peak Hour Factor           | 92     | 92                     | 92   | 92     | 92                         | 92    | 92     | 92   | 92                             | 92     | 92   | 92   |
| Heavy Vehicles, %          | 0      | 0                      | 0    | 0      | 0                          | 0     | 0      | 0    | 0                              | 0      | 0    | 0    |
| Mvmt Flow                  | 0      | 3658                   | 5    | 0      | 3129                       | 0     | 0      | 0    | 9                              | 0      | 0    | 0    |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Major/Minor                | Major1 |                        |      | Major2 |                            |       | Minor1 |      |                                | Minor2 |      |      |
| Conflicting Flow All       | -      | 0                      | 0    | -      | -                          | 0     | -      | -    | 1832                           | -      | -    | 1565 |
| Stage 1                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 2                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Critical Hdwy              | -      | -                      | -    | -      | -                          | -     | -      | -    | 7.1                            | -      | -    | 7.1  |
| Critical Hdwy Stg 1        | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Critical Hdwy Stg 2        | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Follow-up Hdwy             | -      | -                      | -    | -      | -                          | -     | -      | -    | 3.9                            | -      | -    | 3.9  |
| Pot Cap-1 Maneuver         | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | *144                           | 0      | 0    | *251 |
| Stage 1                    | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | -                              | 0      | 0    | -    |
| Stage 2                    | 0      | -                      | -    | 0      | -                          | -     | 0      | 0    | -                              | 0      | 0    | -    |
| Platoon blocked, %         | -      | -                      | -    | -      | -                          | -     | -      | -    | 1                              | -      | -    | 1    |
| Mov Cap-1 Maneuver         | -      | -                      | -    | -      | -                          | -     | -      | -    | *144                           | -      | -    | *251 |
| Mov Cap-2 Maneuver         | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 1                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
| Stage 2                    | -      | -                      | -    | -      | -                          | -     | -      | -    | -                              | -      | -    | -    |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Approach                   | EB     |                        |      | WB     |                            |       | NB     |      |                                | SB     |      |      |
| HCM Control Delay, s       | 0      |                        |      | 0      |                            |       | 31.6   |      |                                | 0      |      |      |
| HCM LOS                    |        |                        |      |        |                            |       | D      |      |                                | A      |      |      |
|                            |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| Minor Lane/Major Mvmt      | NBLn1  | EBT                    | EBR  | WBT    | WBR                        | SBLn1 |        |      |                                |        |      |      |
| Capacity (veh/h)           | 144    | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| HCM Lane V/C Ratio         | 0.06   | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| HCM Control Delay (s)      | 31.6   | -                      | -    | -      | -                          | 0     |        |      |                                |        |      |      |
| HCM Lane LOS               | D      | -                      | -    | -      | -                          | A     |        |      |                                |        |      |      |
| HCM 95th %tile Q(veh)      | 0.2    | -                      | -    | -      | -                          | -     |        |      |                                |        |      |      |
| Notes                      |        |                        |      |        |                            |       |        |      |                                |        |      |      |
| ~: Volume exceeds capacity |        | \$: Delay exceeds 300s |      |        | +: Computation Not Defined |       |        |      | *: All major volume in platoon |        |      |      |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/10/2020



| Lane Group           | EBL   | EBT   | WBL   | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations  |       |       |       |       |       |       |       |       |
| Traffic Volume (vph) | 2     | 3371  | 27    | 2874  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2     | 3371  | 27    | 2874  | 2     | 0     | 37    | 0     |
| Turn Type            | Prot  | NA    | Prot  | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7     | 4     | 3     | 8     |       | 2     |       | 6     |
| Permitted Phases     |       |       |       |       | 2     |       | 6     |       |
| Detector Phase       | 7     | 4     | 3     | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |       |       |       |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0   | 5.0   | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.6   | 11.5  | 9.6   | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 23.6  | 81.6  | 19.4  | 77.4  | 19.0  | 19.0  | 19.0  | 19.0  |
| Total Split (%)      | 19.7% | 68.0% | 16.2% | 64.5% | 15.8% | 15.8% | 15.8% | 15.8% |
| Yellow Time (s)      | 3.6   | 5.5   | 3.6   | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.6   | 6.5   | 4.6   | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lag   | Lag   | Lead  | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes   | Yes   | Yes   |       |       |       |       |
| Recall Mode          | None  | C-Max | None  | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

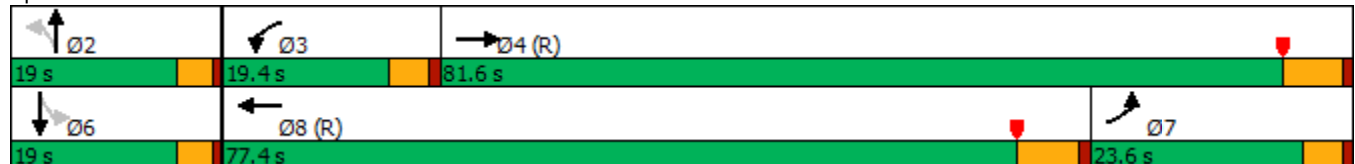
Actuated Cycle Length: 120

Offset: 60 (50%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/10/2020

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |                                                                                   |                                                                                    |   |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 2                                                                                 | 3371                                                                                                                                                                                                                                                  | 14                                                                                | 27                                                                                | 2874                                                                                                                                                                                                                                                  | 16                                                                                | 2                                                                                  | 0                                                                                                                                                                       | 11                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)        | 2                                                                                 | 3371                                                                                                                                                                                                                                                  | 14                                                                                | 27                                                                                | 2874                                                                                                                                                                                                                                                  | 16                                                                                | 2                                                                                  | 0                                                                                                                                                                       | 11                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                                                                                                         |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 2                                                                                 | 3664                                                                                                                                                                                                                                                  | 15                                                                                | 29                                                                                | 3124                                                                                                                                                                                                                                                  | 17                                                                                | 2                                                                                  | 0                                                                                                                                                                       | 12                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                                                                                                    | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 330                                                                               | 4070                                                                                                                                                                                                                                                  | 17                                                                                | 47                                                                                | 3146                                                                                                                                                                                                                                                  | 17                                                                                | 41                                                                                 | 13                                                                                                                                                                      | 116                                                                                 | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green              | 0.36                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.03                                                                              | 0.59                                                                                                                                                                                                                                                  | 0.59                                                                              | 0.08                                                                               | 0.00                                                                                                                                                                    | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5332                                                                                                                                                                                                                                                  | 22                                                                                | 1810                                                                              | 5324                                                                                                                                                                                                                                                  | 29                                                                                | 80                                                                                 | 152                                                                                                                                                                     | 1391                                                                                | 1424                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 2                                                                                 | 2374                                                                                                                                                                                                                                                  | 1305                                                                              | 29                                                                                | 2027                                                                                                                                                                                                                                                  | 1114                                                                              | 14                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1896                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1895                                                                              | 1623                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 1424                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 1.9                                                                               | 69.6                                                                                                                                                                                                                                                  | 70.0                                                                              | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 2.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 1.9                                                                               | 69.6                                                                                                                                                                                                                                                  | 70.0                                                                              | 0.9                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 2.9                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.01                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.02                                                                              | 0.14                                                                               |                                                                                                                                                                         | 0.86                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 330                                                                               | 2640                                                                                                                                                                                                                                                  | 1447                                                                              | 47                                                                                | 2043                                                                                                                                                                                                                                                  | 1120                                                                              | 170                                                                                | 0                                                                                                                                                                       | 0                                                                                   | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                 | 0.01                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.90                                                                              | 0.62                                                                              | 0.99                                                                                                                                                                                                                                                  | 0.99                                                                              | 0.08                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 330                                                                               | 2640                                                                                                                                                                                                                                                  | 1447                                                                              | 223                                                                               | 2043                                                                                                                                                                                                                                                  | 1120                                                                              | 233                                                                                | 0                                                                                                                                                                       | 0                                                                                   | 239                                                                                 | 0                                                                                   | 199                                                                                 |
| HCM Platoon Ratio            | 2.00                                                                              | 2.00                                                                                                                                                                                                                                                  | 2.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.32                                                                              | 0.32                                                                                                                                                                                                                                                  | 0.32                                                                              | 1.00                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 31.2                                                                              | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 57.9                                                                              | 24.3                                                                                                                                                                                                                                                  | 24.4                                                                              | 50.8                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh       | 0.0                                                                               | 5.4                                                                                                                                                                                                                                                   | 9.4                                                                               | 1.6                                                                               | 9.6                                                                                                                                                                                                                                                   | 14.1                                                                              | 0.2                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.0                                                                               | 2.0                                                                                                                                                                                                                                                   | 3.8                                                                               | 0.9                                                                               | 26.3                                                                                                                                                                                                                                                  | 30.4                                                                              | 0.4                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 31.2                                                                              | 5.4                                                                                                                                                                                                                                                   | 9.4                                                                               | 59.5                                                                              | 33.9                                                                                                                                                                                                                                                  | 38.5                                                                              | 51.1                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                    | C                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                 | C                                                                                                                                                                                                                                                     | D                                                                                 | D                                                                                  | A                                                                                                                                                                       | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 3681                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 3170                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 14                                                                                 |                                                                                                                                                                         |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 6.9                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 35.7                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 51.1                                                                               |                                                                                                                                                                         |                                                                                     | 52.1                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | D                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | D                                                                                  |                                                                                                                                                                         |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 3                                                                                 | 4                                                                                 |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                    | 7                                                                                                                                                                       | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.2                                                                              |                                                                                                                                                                                                                                                       | 7.7                                                                               | 98.1                                                                              |                                                                                                                                                                                                                                                       | 14.2                                                                              |                                                                                    | 28.4                                                                                                                                                                    | 77.4                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             |                                                                                                                                                                                                                                                       | 4.6                                                                               | 6.5                                                                               |                                                                                                                                                                                                                                                       | * 4.2                                                                             |                                                                                    | 6.5                                                                                                                                                                     | * 6.5                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 15                                                                              |                                                                                                                                                                                                                                                       | 14.8                                                                              | 75.1                                                                              |                                                                                                                                                                                                                                                       | * 15                                                                              |                                                                                    | 19.0                                                                                                                                                                    | * 71                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.9                                                                               |                                                                                                                                                                                                                                                       | 3.9                                                                               | 2.0                                                                               |                                                                                                                                                                                                                                                       | 4.9                                                                               |                                                                                    | 2.1                                                                                                                                                                     | 72.0                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               | 65.6                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                    | 0.0                                                                                                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 20.5                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | C                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

**APPENDIX 8.1:**

**SUPPLEMENTAL ANALYSIS (ALTERNATIVE 1) WORKSHEETS**

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Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL  | EBT   | WBT   | NBR  | Ø7   |
|----------------------|------|-------|-------|------|------|
| Lane Configurations  |      |       |       |      |      |
| Traffic Volume (vph) | 5    | 1226  | 2511  | 6    |      |
| Future Volume (vph)  | 5    | 1226  | 2511  | 6    |      |
| Turn Type            | Prot | NA    | NA    | Prot |      |
| Protected Phases     | 5    | 2     | 6     | 3    | 7    |
| Permitted Phases     |      |       |       |      |      |
| Detector Phase       | 5    | 2     | 6     | 3    |      |
| Switch Phase         |      |       |       |      |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 5.0  | 5.0  |
| Minimum Split (s)    | 9.6  | 26.6  | 26.6  | 9.1  | 9.1  |
| Total Split (s)      | 11.0 | 110.0 | 99.0  | 10.0 | 10.0 |
| Total Split (%)      | 9.2% | 91.7% | 82.5% | 8.3% | 8%   |
| Yellow Time (s)      | 3.6  | 3.6   | 3.6   | 3.6  | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 0.5  | 0.5  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0  |      |
| Total Lost Time (s)  | 4.6  | 4.6   | 4.6   | 4.1  |      |
| Lead/Lag             | Lead |       | Lag   |      |      |
| Lead-Lag Optimize?   | Yes  |       | Yes   |      |      |
| Recall Mode          | None | None  | None  | None | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 63.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|       |    |      |    |  |  |  |  |  |      |    |
|-------|----|------|----|--|--|--|--|--|------|----|
|       | Ø2 |      |    |  |  |  |  |  |      | Ø3 |
| 110 s |    |      |    |  |  |  |  |  | 10 s |    |
|       | Ø5 |      | Ø6 |  |  |  |  |  |      | Ø7 |
| 11 s  |    | 99 s |    |  |  |  |  |  | 10 s |    |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

08/11/2020

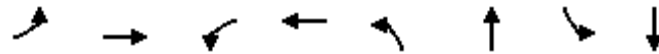
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|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |                                                                                     |  |
| Traffic Volume (veh/h)       | 5                                                                                 | 1226                                                                                                                                                                                                                                                  | 7                                                                                 | 0                                                                                 | 2511                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1226                                                                                                                                                                                                                                                  | 7                                                                                 | 0                                                                                 | 2511                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1333                                                                                                                                                                                                                                                  | 8                                                                                 | 0                                                                                 | 2729                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 4982                                                                                                                                                                                                                                                  | 30                                                                                | 0                                                                                 | 4492                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.94                                                                                                                                                                                                                                                  | 0.94                                                                              | 0.00                                                                              | 0.87                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5320                                                                                                                                                                                                                                                  | 32                                                                                | 0                                                                                 | 5529                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h         | 5                                                                                 | 866                                                                                                                                                                                                                                                   | 475                                                                               | 0                                                                                 | 2729                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1894                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 0.2                                                                               | 1.5                                                                                                                                                                                                                                                   | 1.5                                                                               | 0.0                                                                               | 10.7                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 1.5                                                                                                                                                                                                                                                   | 1.5                                                                               | 0.0                                                                               | 10.7                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.02                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 3238                                                                                                                                                                                                                                                  | 1774                                                                              | 0                                                                                 | 4492                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.42                                                                              | 0.27                                                                                                                                                                                                                                                  | 0.27                                                                              | 0.00                                                                              | 0.61                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 160                                                                               | 5044                                                                                                                                                                                                                                                  | 2763                                                                              | 0                                                                                 | 6776                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 35.8                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.2                                                                               | 0.0                                                                               | 1.4                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 8.4                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 44.2                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.0                                                                               | 1.5                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 1346                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2729                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.4                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 1.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 72.3                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5.1                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 67.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 105.4                                                                             |                                                                                                                                                                                                                                                       |                                                                                   | 6.4                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 94.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 2.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 12.7                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 10.4                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 49.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 1.1                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 4    | 1221  | 12   | 2508  | 3     | 0     | 11    | 0     |
| Future Volume (vph)  | 4    | 1221  | 12   | 2508  | 3     | 0     | 11    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 9.1  | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 7.6% | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag  | Lag   | Lead | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

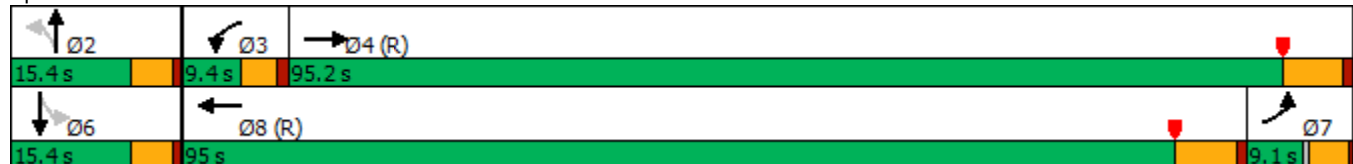
Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |                                                                                                                                                                            |  |  |                                                                                                                                                                            |  |  |                                                                                         |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                         | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                         | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                        | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  | <br><br> |                                                                                   |  | <br><br> |                                                                                   |                                                                                    | <br> |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 1221                                                                                                                                                                                                                                                        | 7                                                                                 | 12                                                                                | 2508                                                                                                                                                                                                                                                        | 35                                                                                | 3                                                                                  | 0                                                                                                                                                                          | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1221                                                                                                                                                                                                                                                        | 7                                                                                 | 12                                                                                | 2508                                                                                                                                                                                                                                                        | 35                                                                                | 3                                                                                  | 0                                                                                                                                                                          | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                            | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                 |                                                                                                                                                                            |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                               | 1900                                                                                                                                                                       | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 1327                                                                                                                                                                                                                                                        | 8                                                                                 | 13                                                                                | 2726                                                                                                                                                                                                                                                        | 38                                                                                | 3                                                                                  | 0                                                                                                                                                                          | 15                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                                                                                                       | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 112                                                                               | 4278                                                                                                                                                                                                                                                        | 26                                                                                | 27                                                                                | 3888                                                                                                                                                                                                                                                        | 54                                                                                | 42                                                                                 | 7                                                                                                                                                                          | 72                                                                                  | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| Arrive On Green              | 0.06                                                                              | 0.80                                                                                                                                                                                                                                                        | 0.80                                                                              | 0.01                                                                              | 0.74                                                                                                                                                                                                                                                        | 0.74                                                                              | 0.05                                                                               | 0.00                                                                                                                                                                       | 0.05                                                                                | 0.05                                                                                | 0.00                                                                                | 0.05                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5320                                                                                                                                                                                                                                                        | 32                                                                                | 1810                                                                              | 5272                                                                                                                                                                                                                                                        | 73                                                                                | 130                                                                                | 139                                                                                                                                                                        | 1347                                                                                | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 863                                                                                                                                                                                                                                                         | 472                                                                               | 13                                                                                | 1785                                                                                                                                                                                                                                                        | 979                                                                               | 18                                                                                 | 0                                                                                                                                                                          | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 1894                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 1887                                                                              | 1616                                                                               | 0                                                                                                                                                                          | 0                                                                                   | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.2                                                                               | 7.8                                                                                                                                                                                                                                                         | 7.8                                                                               | 0.9                                                                               | 33.6                                                                                                                                                                                                                                                        | 34.0                                                                              | 0.0                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 7.8                                                                                                                                                                                                                                                         | 7.8                                                                               | 0.9                                                                               | 33.6                                                                                                                                                                                                                                                        | 34.0                                                                              | 1.3                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.02                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.04                                                                              | 0.17                                                                               |                                                                                                                                                                            | 0.83                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 112                                                                               | 2781                                                                                                                                                                                                                                                        | 1523                                                                              | 27                                                                                | 2550                                                                                                                                                                                                                                                        | 1392                                                                              | 122                                                                                | 0                                                                                                                                                                          | 0                                                                                   | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| V/C Ratio(X)                 | 0.04                                                                              | 0.31                                                                                                                                                                                                                                                        | 0.31                                                                              | 0.49                                                                              | 0.70                                                                                                                                                                                                                                                        | 0.70                                                                              | 0.15                                                                               | 0.00                                                                                                                                                                       | 0.00                                                                                | 0.09                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 112                                                                               | 2781                                                                                                                                                                                                                                                        | 1523                                                                              | 78                                                                                | 2550                                                                                                                                                                                                                                                        | 1392                                                                              | 179                                                                                | 0                                                                                                                                                                          | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.97                                                                              | 0.97                                                                                                                                                                                                                                                        | 0.97                                                                              | 0.48                                                                              | 0.48                                                                                                                                                                                                                                                        | 0.48                                                                              | 1.00                                                                               | 0.00                                                                                                                                                                       | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 52.9                                                                              | 3.1                                                                                                                                                                                                                                                         | 3.1                                                                               | 58.7                                                                              | 8.5                                                                                                                                                                                                                                                         | 8.6                                                                               | 54.3                                                                               | 0.0                                                                                                                                                                        | 0.0                                                                                 | 54.1                                                                                | 0.0                                                                                 | 53.8                                                                                |
| Incr Delay (d2), s/veh       | 0.1                                                                               | 0.3                                                                                                                                                                                                                                                         | 0.5                                                                               | 2.5                                                                               | 0.8                                                                                                                                                                                                                                                         | 1.5                                                                               | 0.6                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 1.6                                                                                                                                                                                                                                                         | 1.8                                                                               | 0.4                                                                               | 9.0                                                                                                                                                                                                                                                         | 10.2                                                                              | 0.5                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 53.0                                                                              | 3.3                                                                                                                                                                                                                                                         | 3.6                                                                               | 61.2                                                                              | 9.3                                                                                                                                                                                                                                                         | 10.1                                                                              | 54.9                                                                               | 0.0                                                                                                                                                                        | 0.0                                                                                 | 54.3                                                                                | 0.0                                                                                 | 53.8                                                                                |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                           | A                                                                                 | E                                                                                 | A                                                                                                                                                                                                                                                           | B                                                                                 | D                                                                                  | A                                                                                                                                                                          | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 1339                                                                              |                                                                                                                                                                                                                                                             |                                                                                   | 2777                                                                              |                                                                                                                                                                                                                                                             |                                                                                   | 18                                                                                 |                                                                                                                                                                            |                                                                                     | 13                                                                                  |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 3.6                                                                               |                                                                                                                                                                                                                                                             |                                                                                   | 9.8                                                                               |                                                                                                                                                                                                                                                             |                                                                                   | 54.9                                                                               |                                                                                                                                                                            |                                                                                     | 54.3                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                             |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                             |                                                                                   | D                                                                                  |                                                                                                                                                                            |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                             | 3                                                                                 | 4                                                                                 |                                                                                                                                                                                                                                                             | 6                                                                                 | 7                                                                                  | 8                                                                                                                                                                          |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              |                                                                                                                                                                                                                                                             | 6.0                                                                               | 103.0                                                                             |                                                                                                                                                                                                                                                             | 11.0                                                                              | 14.0                                                                               | 95.0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                             | * 4.2                                                                             | 6.5                                                                               |                                                                                                                                                                                                                                                             | 4.6                                                                               | 6.5                                                                                | * 6.5                                                                                                                                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.8                                                                              |                                                                                                                                                                                                                                                             | * 5.2                                                                             | 88.7                                                                              |                                                                                                                                                                                                                                                             | 10.8                                                                              | 5.0                                                                                | * 89                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.3                                                                               |                                                                                                                                                                                                                                                             | 2.9                                                                               | 9.8                                                                               |                                                                                                                                                                                                                                                             | 2.8                                                                               | 2.2                                                                                | 36.0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                             | 0.0                                                                               | 10.3                                                                              |                                                                                                                                                                                                                                                             | 0.0                                                                               | 0.0                                                                                | 35.9                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                             | 8.1                                                                               |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                             | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                    |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL   | EBT   | WBT   | NBR   | Ø7   |
|----------------------|-------|-------|-------|-------|------|
| Lane Configurations  |       |       |       |       |      |
| Traffic Volume (vph) | 3     | 2314  | 1947  | 7     |      |
| Future Volume (vph)  | 3     | 2314  | 1947  | 7     |      |
| Turn Type            | Prot  | NA    | NA    | Prot  |      |
| Protected Phases     | 5     | 2     | 6     | 3     | 7    |
| Permitted Phases     |       |       |       |       |      |
| Detector Phase       | 5     | 2     | 6     | 3     |      |
| Switch Phase         |       |       |       |       |      |
| Minimum Initial (s)  | 5.0   | 10.0  | 10.0  | 5.0   | 5.0  |
| Minimum Split (s)    | 9.6   | 26.6  | 26.6  | 9.1   | 9.1  |
| Total Split (s)      | 12.0  | 108.0 | 96.0  | 12.0  | 12.0 |
| Total Split (%)      | 10.0% | 90.0% | 80.0% | 10.0% | 10%  |
| Yellow Time (s)      | 3.6   | 3.6   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 0.5   | 0.5  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.6   | 4.6   | 4.6   | 4.1   |      |
| Lead/Lag             | Lead  |       | Lag   |       |      |
| Lead-Lag Optimize?   | Yes   |       | Yes   |       |      |
| Recall Mode          | None  | None  | None  | None  | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 49.1

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|       |      |
|-------|------|
| Ø2    | Ø3   |
| 108 s | 12 s |
| Ø5    | Ø6   |
| 12 s  | 96 s |
|       | 12 s |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

08/11/2020

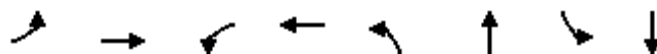
|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |                                                                                     |  |
| Traffic Volume (veh/h)       | 3                                                                                 | 2314                                                                                                                                                                                                                                                  | 4                                                                                 | 0                                                                                 | 1947                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2314                                                                                                                                                                                                                                                  | 4                                                                                 | 0                                                                                 | 1947                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2515                                                                                                                                                                                                                                                  | 4                                                                                 | 0                                                                                 | 2116                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 7                                                                                 | 4869                                                                                                                                                                                                                                                  | 8                                                                                 | 0                                                                                 | 4236                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.00                                                                              | 0.91                                                                                                                                                                                                                                                  | 0.91                                                                              | 0.00                                                                              | 0.82                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5348                                                                                                                                                                                                                                                  | 9                                                                                 | 0                                                                                 | 5529                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h         | 3                                                                                 | 1626                                                                                                                                                                                                                                                  | 893                                                                               | 0                                                                                 | 2116                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1898                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 0.1                                                                               | 4.1                                                                                                                                                                                                                                                   | 4.1                                                                               | 0.0                                                                               | 6.5                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 4.1                                                                                                                                                                                                                                                   | 4.1                                                                               | 0.0                                                                               | 6.5                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 7                                                                                 | 3148                                                                                                                                                                                                                                                  | 1728                                                                              | 0                                                                                 | 4236                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.41                                                                              | 0.52                                                                                                                                                                                                                                                  | 0.52                                                                              | 0.00                                                                              | 0.50                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 261                                                                               | 6964                                                                                                                                                                                                                                                  | 3824                                                                              | 0                                                                                 | 9234                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 25.5                                                                              | 0.4                                                                                                                                                                                                                                                   | 0.4                                                                               | 0.0                                                                               | 1.5                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 12.8                                                                              | 0.1                                                                                                                                                                                                                                                   | 0.2                                                                               | 0.0                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 38.3                                                                              | 0.5                                                                                                                                                                                                                                                   | 0.6                                                                               | 0.0                                                                               | 1.5                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 2522                                                                              |                                                                                                                                                                                                                                                       | 2116                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.6                                                                               |                                                                                                                                                                                                                                                       | 1.5                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 5                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 51.3                                                                              |                                                                                                                                                                                                                                                       | 4.8                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 46.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       | 4.6                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 103.4                                                                             |                                                                                                                                                                                                                                                       | 7.4                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 91.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 6.1                                                                               |                                                                                                                                                                                                                                                       | 2.1                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 8.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 40.7                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 28.6                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 1.0                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↰    | ↑↑↑   | ↰    | ↑↑↑   |       | ↕     | ↰     | ↰     |
| Traffic Volume (vph) | 2    | 2309  | 23   | 1935  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2    | 2309  | 23   | 1935  | 2     | 0     | 37    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 9.1  | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 7.6% | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lead | Lag   | Lead | Lag   |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

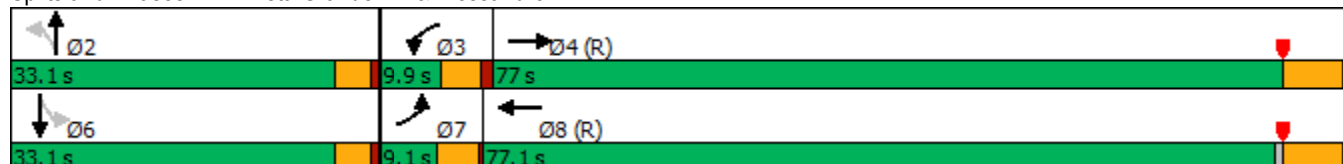
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 2                                                                                 | 2309                                                                              | 12                                                                                | 23                                                                                | 1935                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 9                                                                                   | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)        | 2                                                                                 | 2309                                                                              | 12                                                                                | 23                                                                                | 1935                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 9                                                                                   | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 2                                                                                 | 2510                                                                              | 13                                                                                | 25                                                                                | 2103                                                                              | 17                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 5                                                                                 | 4077                                                                              | 21                                                                                | 43                                                                                | 4196                                                                              | 34                                                                                | 44                                                                                 | 14                                                                                  | 113                                                                                 | 181                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.77                                                                              | 0.77                                                                              | 0.02                                                                              | 0.79                                                                              | 0.79                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5325                                                                              | 28                                                                                | 1810                                                                              | 5307                                                                              | 43                                                                                | 106                                                                                | 165                                                                                 | 1352                                                                                | 1427                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 2                                                                                 | 1629                                                                              | 894                                                                               | 25                                                                                | 1370                                                                              | 750                                                                               | 12                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1895                                                                              | 1810                                                                              | 1729                                                                              | 1892                                                                              | 1622                                                                               | 0                                                                                   | 0                                                                                   | 1427                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 25.1                                                                              | 25.1                                                                              | 1.6                                                                               | 16.5                                                                              | 16.5                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 25.1                                                                              | 25.1                                                                              | 1.6                                                                               | 16.5                                                                              | 16.5                                                                              | 0.8                                                                                | 0.0                                                                                 | 0.0                                                                                 | 3.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.17                                                                               |                                                                                     | 0.83                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 5                                                                                 | 2647                                                                              | 1451                                                                              | 43                                                                                | 2734                                                                              | 1496                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 181                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                 | 0.41                                                                              | 0.62                                                                              | 0.62                                                                              | 0.59                                                                              | 0.50                                                                              | 0.50                                                                              | 0.07                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2647                                                                              | 1451                                                                              | 80                                                                                | 2734                                                                              | 1496                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 0.86                                                                              | 0.86                                                                              | 0.86                                                                              | 0.74                                                                              | 0.74                                                                              | 0.74                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.7                                                                              | 6.2                                                                               | 6.2                                                                               | 58.0                                                                              | 4.4                                                                               | 4.4                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh       | 41.5                                                                              | 0.9                                                                               | 1.7                                                                               | 3.5                                                                               | 0.5                                                                               | 0.9                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 6.2                                                                               | 7.1                                                                               | 0.8                                                                               | 3.6                                                                               | 4.1                                                                               | 0.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 101.3                                                                             | 7.2                                                                               | 7.9                                                                               | 61.5                                                                              | 4.8                                                                               | 5.2                                                                               | 51.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                    | F                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2525                                                                              |                                                                                   |                                                                                   |                                                                                   | 2145                                                                              |                                                                                   | 12                                                                                 |                                                                                     |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 5.6                                                                               |                                                                                   | 51.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 52.1                                                                                |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   | D                                                                                  |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                  |                                                                                     | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.2                                                                              |                                                                                   | 7.4                                                                               |                                                                                   | 98.4                                                                              |                                                                                   | 14.2                                                                               |                                                                                     | 4.4                                                                                 |                                                                                     | 101.4                                                                               |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             |                                                                                   | 4.6                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | * 4.2                                                                              |                                                                                     | 4.1                                                                                 |                                                                                     | 6.5                                                                                 |                                                                                     |
| Max Green Setting (Gmax), s  | * 29                                                                              |                                                                                   | 5.3                                                                               |                                                                                   | 70.5                                                                              |                                                                                   | * 29                                                                               |                                                                                     | 5.0                                                                                 |                                                                                     | 70.6                                                                                |                                                                                     |
| Max Q Clear Time (g_c+l1), s | 2.8                                                                               |                                                                                   | 3.6                                                                               |                                                                                   | 27.1                                                                              |                                                                                   | 5.0                                                                                |                                                                                     | 2.1                                                                                 |                                                                                     | 18.5                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 27.7                                                                              |                                                                                   | 0.1                                                                                |                                                                                     | 0.0                                                                                 |                                                                                     | 22.7                                                                                |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 7.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL  | EBT   | WBT   | NBR  | Ø7   |
|----------------------|------|-------|-------|------|------|
| Lane Configurations  |      |       |       |      |      |
| Traffic Volume (vph) | 5    | 1603  | 2858  | 6    |      |
| Future Volume (vph)  | 5    | 1603  | 2858  | 6    |      |
| Turn Type            | Prot | NA    | NA    | Prot |      |
| Protected Phases     | 5    | 2     | 6     | 3    | 7    |
| Permitted Phases     |      |       |       |      |      |
| Detector Phase       | 5    | 2     | 6     | 3    |      |
| Switch Phase         |      |       |       |      |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 5.0  | 5.0  |
| Minimum Split (s)    | 9.6  | 26.6  | 26.6  | 9.1  | 9.1  |
| Total Split (s)      | 11.0 | 110.0 | 99.0  | 10.0 | 10.0 |
| Total Split (%)      | 9.2% | 91.7% | 82.5% | 8.3% | 8%   |
| Yellow Time (s)      | 3.6  | 3.6   | 3.6   | 3.6  | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 0.5  | 0.5  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0  |      |
| Total Lost Time (s)  | 4.6  | 4.6   | 4.6   | 4.1  |      |
| Lead/Lag             | Lead |       | Lag   |      |      |
| Lead-Lag Optimize?   | Yes  |       | Yes   |      |      |
| Recall Mode          | None | None  | None  | None | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 80.1

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|       |    |      |    |  |  |  |  |  |  |      |    |
|-------|----|------|----|--|--|--|--|--|--|------|----|
|       | Ø2 |      |    |  |  |  |  |  |  |      | Ø3 |
| 110 s |    |      |    |  |  |  |  |  |  | 10 s |    |
|       | Ø5 |      | Ø6 |  |  |  |  |  |  |      | Ø7 |
| 11 s  |    | 99 s |    |  |  |  |  |  |  | 10 s |    |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

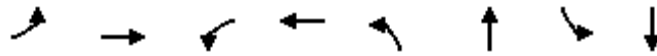
|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |                                                                                     |  |
| Traffic Volume (veh/h)       | 5                                                                                 | 1603                                                                                                                                                                                                                                                  | 8                                                                                 | 0                                                                                 | 2858                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1603                                                                                                                                                                                                                                                  | 8                                                                                 | 0                                                                                 | 2858                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1742                                                                                                                                                                                                                                                  | 9                                                                                 | 0                                                                                 | 3107                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 5043                                                                                                                                                                                                                                                  | 26                                                                                | 0                                                                                 | 4602                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.00                                                                              | 0.89                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5326                                                                                                                                                                                                                                                  | 28                                                                                | 0                                                                                 | 5529                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h         | 5                                                                                 | 1131                                                                                                                                                                                                                                                  | 620                                                                               | 0                                                                                 | 3107                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1895                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 0.2                                                                               | 2.2                                                                                                                                                                                                                                                   | 2.2                                                                               | 0.0                                                                               | 14.6                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 2.2                                                                                                                                                                                                                                                   | 2.2                                                                               | 0.0                                                                               | 14.6                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.01                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 3274                                                                                                                                                                                                                                                  | 1794                                                                              | 0                                                                                 | 4602                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.42                                                                              | 0.35                                                                                                                                                                                                                                                  | 0.35                                                                              | 0.00                                                                              | 0.68                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 134                                                                               | 4207                                                                                                                                                                                                                                                  | 2306                                                                              | 0                                                                                 | 5653                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 42.9                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.2                                                                               | 0.0                                                                               | 1.4                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 8.6                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 0.2                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 51.5                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.0                                                                               | 1.6                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 1756                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 3107                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.4                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 1.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 86.6                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 5.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 81.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 105.4                                                                             |                                                                                                                                                                                                                                                       |                                                                                   | 6.4                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 94.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 4.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 2.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 16.6                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 17.1                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 60.3                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 1.2                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 4    | 1598  | 13   | 2854  | 3     | 0     | 11    | 0     |
| Future Volume (vph)  | 4    | 1598  | 13   | 2854  | 3     | 0     | 11    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 9.1  | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 7.6% | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag  | Lag   | Lead | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

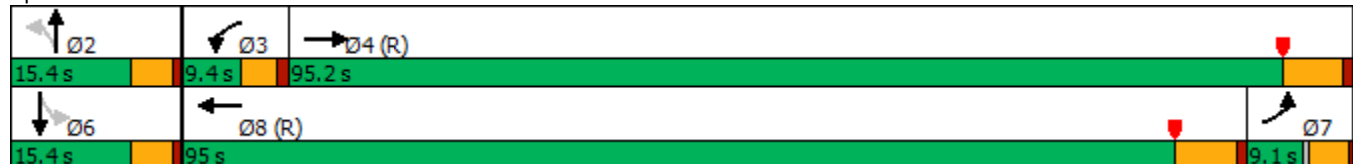
Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 1598                                                                              | 8                                                                                 | 13                                                                                | 2854                                                                              | 35                                                                                | 3                                                                                  | 0                                                                                   | 15                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1598                                                                              | 8                                                                                 | 13                                                                                | 2854                                                                              | 35                                                                                | 3                                                                                  | 0                                                                                   | 15                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 1737                                                                              | 9                                                                                 | 14                                                                                | 3102                                                                              | 38                                                                                | 3                                                                                  | 0                                                                                   | 16                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 111                                                                               | 4273                                                                              | 22                                                                                | 28                                                                                | 3895                                                                              | 48                                                                                | 41                                                                                 | 7                                                                                   | 74                                                                                  | 142                                                                                 | 0                                                                                   | 88                                                                                  |
| Arrive On Green              | 0.06                                                                              | 0.80                                                                              | 0.80                                                                              | 0.02                                                                              | 0.74                                                                              | 0.74                                                                              | 0.05                                                                               | 0.00                                                                                | 0.05                                                                                | 0.05                                                                                | 0.00                                                                                | 0.05                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5325                                                                              | 28                                                                                | 1810                                                                              | 5282                                                                              | 64                                                                                | 122                                                                                | 133                                                                                 | 1361                                                                                | 1419                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 1128                                                                              | 618                                                                               | 14                                                                                | 2027                                                                              | 1113                                                                              | 19                                                                                 | 0                                                                                   | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1895                                                                              | 1810                                                                              | 1729                                                                              | 1888                                                                              | 1616                                                                               | 0                                                                                   | 0                                                                                   | 1419                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.2                                                                               | 11.5                                                                              | 11.5                                                                              | 0.9                                                                               | 44.6                                                                              | 45.3                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 11.5                                                                              | 11.5                                                                              | 0.9                                                                               | 44.6                                                                              | 45.3                                                                              | 1.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.03                                                                              | 0.16                                                                               |                                                                                     | 0.84                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 111                                                                               | 2774                                                                              | 1520                                                                              | 28                                                                                | 2550                                                                              | 1393                                                                              | 123                                                                                | 0                                                                                   | 0                                                                                   | 142                                                                                 | 0                                                                                   | 88                                                                                  |
| V/C Ratio(X)                 | 0.04                                                                              | 0.41                                                                              | 0.41                                                                              | 0.50                                                                              | 0.79                                                                              | 0.80                                                                              | 0.15                                                                               | 0.00                                                                                | 0.00                                                                                | 0.08                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 111                                                                               | 2774                                                                              | 1520                                                                              | 78                                                                                | 2550                                                                              | 1393                                                                              | 179                                                                                | 0                                                                                   | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.28                                                                              | 0.28                                                                              | 0.28                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 53.0                                                                              | 3.5                                                                               | 3.5                                                                               | 58.6                                                                              | 10.0                                                                              | 10.1                                                                              | 54.2                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.0                                                                                | 0.0                                                                                 | 53.7                                                                                |
| Incr Delay (d2), s/veh       | 0.1                                                                               | 0.4                                                                               | 0.8                                                                               | 1.4                                                                               | 0.8                                                                               | 1.4                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 2.3                                                                               | 2.7                                                                               | 0.4                                                                               | 11.9                                                                              | 13.4                                                                              | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 53.1                                                                              | 3.9                                                                               | 4.2                                                                               | 60.0                                                                              | 10.7                                                                              | 11.5                                                                              | 54.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.2                                                                                | 0.0                                                                                 | 53.7                                                                                |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | B                                                                                 | B                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 1750                                                                              |                                                                                   |                                                                                   |                                                                                   | 3154                                                                              |                                                                                   | 19                                                                                 |                                                                                     |                                                                                     |                                                                                     | 13                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 11.2                                                                              |                                                                                   | 54.8                                                                               |                                                                                     |                                                                                     |                                                                                     | 54.2                                                                                |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |                                                                                   | D                                                                                  |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                  |                                                                                     | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.2                                                                              |                                                                                   | 6.1                                                                               |                                                                                   | 102.8                                                                             |                                                                                   | 11.2                                                                               |                                                                                     | 13.8                                                                                |                                                                                     | 95.0                                                                                |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | * 4.2                                                                             |                                                                                   | 6.5                                                                               |                                                                                   | 4.6                                                                                |                                                                                     | 6.5                                                                                 |                                                                                     | * 6.5                                                                               |                                                                                     |
| Max Green Setting (Gmax), s  | 10.8                                                                              |                                                                                   | * 5.2                                                                             |                                                                                   | 88.7                                                                              |                                                                                   | 10.8                                                                               |                                                                                     | 5.0                                                                                 |                                                                                     | * 89                                                                                |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.3                                                                               |                                                                                   | 2.9                                                                               |                                                                                   | 13.5                                                                              |                                                                                   | 2.8                                                                                |                                                                                     | 2.2                                                                                 |                                                                                     | 47.3                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 16.7                                                                              |                                                                                   | 0.0                                                                                |                                                                                     | 0.0                                                                                 |                                                                                     | 34.7                                                                                |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 9.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL   | EBT   | WBT   | NBR   | Ø7   |
|----------------------|-------|-------|-------|-------|------|
| Lane Configurations  |       |       |       |       |      |
| Traffic Volume (vph) | 3     | 2688  | 2424  | 8     |      |
| Future Volume (vph)  | 3     | 2688  | 2424  | 8     |      |
| Turn Type            | Prot  | NA    | NA    | Prot  |      |
| Protected Phases     | 5     | 2     | 6     | 3     | 7    |
| Permitted Phases     |       |       |       |       |      |
| Detector Phase       | 5     | 2     | 6     | 3     |      |
| Switch Phase         |       |       |       |       |      |
| Minimum Initial (s)  | 5.0   | 10.0  | 10.0  | 5.0   | 5.0  |
| Minimum Split (s)    | 9.6   | 26.6  | 26.6  | 9.1   | 9.1  |
| Total Split (s)      | 12.0  | 108.0 | 96.0  | 12.0  | 12.0 |
| Total Split (%)      | 10.0% | 90.0% | 80.0% | 10.0% | 10%  |
| Yellow Time (s)      | 3.6   | 3.6   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 0.5   | 0.5  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.6   | 4.6   | 4.6   | 4.1   |      |
| Lead/Lag             | Lead  |       | Lag   |       |      |
| Lead-Lag Optimize?   | Yes   |       | Yes   |       |      |
| Recall Mode          | None  | None  | None  | None  | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 70.9

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|       |      |
|-------|------|
| Ø2    | Ø3   |
| 108 s | 12 s |
| Ø5    | Ø7   |
| 12 s  | 12 s |
| Ø6    |      |
| 96 s  |      |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

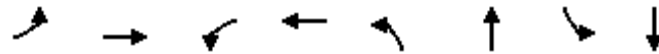
|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |                                                                                     |  |
| Traffic Volume (veh/h)       | 3                                                                                 | 2688                                                                              | 4                                                                                 | 0                                                                                 | 2424                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2688                                                                              | 4                                                                                 | 0                                                                                 | 2424                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2922                                                                              | 4                                                                                 | 0                                                                                 | 2635                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 7                                                                                 | 4996                                                                              | 7                                                                                 | 0                                                                                 | 4480                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.00                                                                              | 0.93                                                                              | 0.93                                                                              | 0.00                                                                              | 0.86                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5349                                                                              | 7                                                                                 | 0                                                                                 | 5529                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h         | 3                                                                                 | 1888                                                                              | 1038                                                                              | 0                                                                                 | 2635                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1899                                                                              | 0                                                                                 | 1729                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 0.1                                                                               | 5.5                                                                               | 5.5                                                                               | 0.0                                                                               | 9.8                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 5.5                                                                               | 5.5                                                                               | 0.0                                                                               | 9.8                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 7                                                                                 | 3229                                                                              | 1773                                                                              | 0                                                                                 | 4480                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.41                                                                              | 0.58                                                                              | 0.59                                                                              | 0.00                                                                              | 0.59                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 192                                                                               | 5138                                                                              | 2821                                                                              | 0                                                                                 | 6812                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 34.6                                                                              | 0.3                                                                               | 0.3                                                                               | 0.0                                                                               | 1.3                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 13.0                                                                              | 0.2                                                                               | 0.3                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.1                                                                               | 0.2                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 47.6                                                                              | 0.5                                                                               | 0.6                                                                               | 0.0                                                                               | 1.4                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 2929                                                                              |                                                                                   |                                                                                   |                                                                                   | 2635                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 1.4                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   |                                                                                   | 5                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 69.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 4.9                                                                               |                                                                                   | 64.7                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.6                                                                               |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 103.4                                                                             |                                                                                   |                                                                                   |                                                                                   | 7.4                                                                               |                                                                                   | 91.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 7.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 2.1                                                                               |                                                                                   | 11.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 57.4                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   | 45.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 2    | 2683  | 25   | 2412  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2    | 2683  | 25   | 2412  | 2     | 0     | 37    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 9.1  | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 7.6% | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lead | Lag   | Lead | Lag   |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

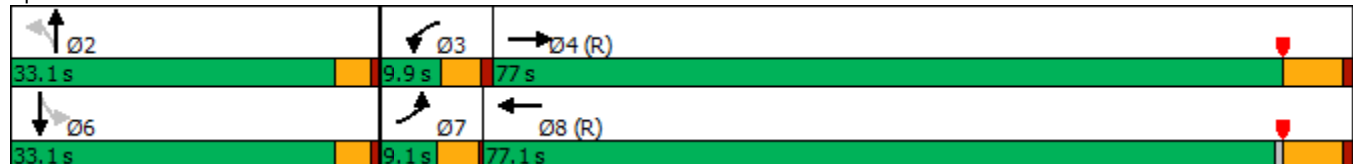
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 2                                                                                 | 2683                                                                              | 13                                                                                | 25                                                                                | 2412                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)        | 2                                                                                 | 2683                                                                              | 13                                                                                | 25                                                                                | 2412                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 2                                                                                 | 2916                                                                              | 14                                                                                | 27                                                                                | 2622                                                                              | 17                                                                                | 2                                                                                  | 0                                                                                   | 11                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 5                                                                                 | 4073                                                                              | 20                                                                                | 45                                                                                | 4204                                                                              | 27                                                                                | 42                                                                                 | 13                                                                                  | 114                                                                                 | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.76                                                                              | 0.76                                                                              | 0.02                                                                              | 0.79                                                                              | 0.79                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5328                                                                              | 26                                                                                | 1810                                                                              | 5317                                                                              | 34                                                                                | 92                                                                                 | 158                                                                                 | 1373                                                                                | 1426                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 2                                                                                 | 1891                                                                              | 1039                                                                              | 27                                                                                | 1704                                                                              | 935                                                                               | 13                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1895                                                                              | 1810                                                                              | 1729                                                                              | 1894                                                                              | 1623                                                                               | 0                                                                                   | 0                                                                                   | 1426                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 34.1                                                                              | 34.3                                                                              | 1.8                                                                               | 24.4                                                                              | 24.5                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 34.1                                                                              | 34.3                                                                              | 1.8                                                                               | 24.4                                                                              | 24.5                                                                              | 0.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.9                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.15                                                                               |                                                                                     | 0.85                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 5                                                                                 | 2643                                                                              | 1449                                                                              | 45                                                                                | 2734                                                                              | 1497                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                 | 0.41                                                                              | 0.72                                                                              | 0.72                                                                              | 0.60                                                                              | 0.62                                                                              | 0.62                                                                              | 0.08                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2643                                                                              | 1449                                                                              | 80                                                                                | 2734                                                                              | 1497                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.56                                                                              | 0.56                                                                              | 0.56                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.7                                                                              | 7.3                                                                               | 7.4                                                                               | 57.9                                                                              | 5.2                                                                               | 5.2                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh       | 38.5                                                                              | 1.3                                                                               | 2.4                                                                               | 2.7                                                                               | 0.6                                                                               | 1.1                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 8.5                                                                               | 9.8                                                                               | 0.8                                                                               | 5.2                                                                               | 6.0                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 98.3                                                                              | 8.7                                                                               | 9.8                                                                               | 60.6                                                                              | 5.8                                                                               | 6.3                                                                               | 51.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                    | F                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2932                                                                              |                                                                                   |                                                                                   |                                                                                   | 2666                                                                              |                                                                                   | 13                                                                                 |                                                                                     |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 9.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 6.5                                                                               |                                                                                   | 51.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 52.1                                                                                |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   | D                                                                                  |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                  |                                                                                     | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.2                                                                              |                                                                                   | 7.6                                                                               |                                                                                   | 98.2                                                                              |                                                                                   | 14.2                                                                               |                                                                                     | 4.4                                                                                 |                                                                                     | 101.4                                                                               |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             |                                                                                   | 4.6                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | * 4.2                                                                              |                                                                                     | 4.1                                                                                 |                                                                                     | 6.5                                                                                 |                                                                                     |
| Max Green Setting (Gmax), s  | * 29                                                                              |                                                                                   | 5.3                                                                               |                                                                                   | 70.5                                                                              |                                                                                   | * 29                                                                               |                                                                                     | 5.0                                                                                 |                                                                                     | 70.6                                                                                |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.9                                                                               |                                                                                   | 3.8                                                                               |                                                                                   | 36.3                                                                              |                                                                                   | 4.9                                                                                |                                                                                     | 2.1                                                                                 |                                                                                     | 26.5                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 27.9                                                                              |                                                                                   | 0.1                                                                                |                                                                                     | 0.0                                                                                 |                                                                                     | 29.9                                                                                |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 8.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL  | EBT   | WBT   | NBR  | Ø7   |
|----------------------|------|-------|-------|------|------|
| Lane Configurations  |      |       |       |      |      |
| Traffic Volume (vph) | 6    | 1880  | 3448  | 7    |      |
| Future Volume (vph)  | 6    | 1880  | 3448  | 7    |      |
| Turn Type            | Prot | NA    | NA    | Prot |      |
| Protected Phases     | 5    | 2     | 6     | 3    | 7    |
| Permitted Phases     |      |       |       |      |      |
| Detector Phase       | 5    | 2     | 6     | 3    |      |
| Switch Phase         |      |       |       |      |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 5.0  | 5.0  |
| Minimum Split (s)    | 9.6  | 26.6  | 26.6  | 9.1  | 9.1  |
| Total Split (s)      | 11.0 | 110.0 | 99.0  | 10.0 | 10.0 |
| Total Split (%)      | 9.2% | 91.7% | 82.5% | 8.3% | 8%   |
| Yellow Time (s)      | 3.6  | 3.6   | 3.6   | 3.6  | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 0.5  | 0.5  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0  |      |
| Total Lost Time (s)  | 4.6  | 4.6   | 4.6   | 4.1  |      |
| Lead/Lag             | Lead |       | Lag   |      |      |
| Lead-Lag Optimize?   | Yes  |       | Yes   |      |      |
| Recall Mode          | None | None  | None  | None | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 102.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|       |      |
|-------|------|
| Ø2    | Ø3   |
| 110 s | 10 s |
| Ø5    | Ø6   |
| 11 s  | 99 s |
|       | 10 s |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

08/11/2020

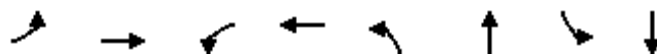
|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |                                                                                     |  |
| Traffic Volume (veh/h)       | 6                                                                                 | 1880                                                                                                                                                                                                                                                  | 8                                                                                 | 0                                                                                 | 3448                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 6                                                                                 | 1880                                                                                                                                                                                                                                                  | 8                                                                                 | 0                                                                                 | 3448                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h         | 7                                                                                 | 2043                                                                                                                                                                                                                                                  | 9                                                                                 | 0                                                                                 | 3748                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 5                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 16                                                                                | 5087                                                                                                                                                                                                                                                  | 22                                                                                | 0                                                                                 | 4668                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.00                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5330                                                                                                                                                                                                                                                  | 23                                                                                | 0                                                                                 | 5529                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h         | 7                                                                                 | 1325                                                                                                                                                                                                                                                  | 727                                                                               | 0                                                                                 | 3748                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1896                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 0.4                                                                               | 2.9                                                                                                                                                                                                                                                   | 2.9                                                                               | 0.0                                                                               | 26.3                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 0.4                                                                               | 2.9                                                                                                                                                                                                                                                   | 2.9                                                                               | 0.0                                                                               | 26.3                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.01                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 16                                                                                | 3300                                                                                                                                                                                                                                                  | 1809                                                                              | 0                                                                                 | 4668                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.44                                                                              | 0.40                                                                                                                                                                                                                                                  | 0.40                                                                              | 0.00                                                                              | 0.80                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 115                                                                               | 3612                                                                                                                                                                                                                                                  | 1980                                                                              | 0                                                                                 | 4852                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 49.8                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.2                                                                               | 0.0                                                                               | 1.8                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 6.9                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 0.4                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 56.6                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.0                                                                               | 2.8                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | E                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 2059                                                                              |                                                                                                                                                                                                                                                       | 3748                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.5                                                                               |                                                                                                                                                                                                                                                       | 2.8                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 5                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 100.9                                                                             |                                                                                                                                                                                                                                                       | 5.5                                                                               |                                                                                   |                                                                                                                                                                                                                                                       | 95.4                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       | 4.6                                                                               |                                                                                   |                                                                                                                                                                                                                                                       | 4.6                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 105.4                                                                             |                                                                                                                                                                                                                                                       | 6.4                                                                               |                                                                                   |                                                                                                                                                                                                                                                       | 94.4                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 4.9                                                                               |                                                                                                                                                                                                                                                       | 2.4                                                                               |                                                                                   |                                                                                                                                                                                                                                                       | 28.3                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 24.5                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   |                                                                                                                                                                                                                                                       | 62.5                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 2.0                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 4    | 1883  | 14   | 3447  | 4     | 0     | 11    | 0     |
| Future Volume (vph)  | 4    | 1883  | 14   | 3447  | 4     | 0     | 11    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 9.1  | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 7.6% | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag  | Lag   | Lead | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 1883                                                                              | 8                                                                                 | 14                                                                                | 3447                                                                              | 35                                                                                | 4                                                                                  | 0                                                                                   | 17                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1883                                                                              | 8                                                                                 | 14                                                                                | 3447                                                                              | 35                                                                                | 4                                                                                  | 0                                                                                   | 17                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 2047                                                                              | 9                                                                                 | 15                                                                                | 3747                                                                              | 38                                                                                | 4                                                                                  | 0                                                                                   | 18                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 106                                                                               | 4257                                                                              | 19                                                                                | 30                                                                                | 3905                                                                              | 39                                                                                | 44                                                                                 | 9                                                                                   | 76                                                                                  | 146                                                                                 | 0                                                                                   | 92                                                                                  |
| Arrive On Green              | 0.06                                                                              | 0.80                                                                              | 0.80                                                                              | 0.02                                                                              | 0.74                                                                              | 0.74                                                                              | 0.06                                                                               | 0.00                                                                                | 0.06                                                                                | 0.06                                                                                | 0.00                                                                                | 0.06                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5330                                                                              | 23                                                                                | 1810                                                                              | 5295                                                                              | 54                                                                                | 145                                                                                | 149                                                                                 | 1322                                                                                | 1417                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 1328                                                                              | 728                                                                               | 15                                                                                | 2443                                                                              | 1342                                                                              | 22                                                                                 | 0                                                                                   | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1896                                                                              | 1810                                                                              | 1729                                                                              | 1890                                                                              | 1616                                                                               | 0                                                                                   | 0                                                                                   | 1417                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.3                                                                               | 15.1                                                                              | 15.1                                                                              | 1.0                                                                               | 75.8                                                                              | 77.1                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.3                                                                               | 15.1                                                                              | 15.1                                                                              | 1.0                                                                               | 75.8                                                                              | 77.1                                                                              | 1.5                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.03                                                                              | 0.18                                                                               |                                                                                     | 0.82                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 106                                                                               | 2762                                                                              | 1514                                                                              | 30                                                                                | 2550                                                                              | 1394                                                                              | 128                                                                                | 0                                                                                   | 0                                                                                   | 146                                                                                 | 0                                                                                   | 92                                                                                  |
| V/C Ratio(X)                 | 0.04                                                                              | 0.48                                                                              | 0.48                                                                              | 0.51                                                                              | 0.96                                                                              | 0.96                                                                              | 0.17                                                                               | 0.00                                                                                | 0.00                                                                                | 0.08                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 106                                                                               | 2762                                                                              | 1514                                                                              | 78                                                                                | 2550                                                                              | 1394                                                                              | 180                                                                                | 0                                                                                   | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.09                                                                              | 0.09                                                                              | 0.09                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 53.3                                                                              | 3.9                                                                               | 3.9                                                                               | 58.5                                                                              | 14.1                                                                              | 14.3                                                                              | 54.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 53.7                                                                                | 0.0                                                                                 | 53.3                                                                                |
| Incr Delay (d2), s/veh       | 0.1                                                                               | 0.6                                                                               | 1.0                                                                               | 0.4                                                                               | 1.3                                                                               | 2.6                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 3.1                                                                               | 3.6                                                                               | 0.4                                                                               | 20.2                                                                              | 23.0                                                                              | 0.7                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 53.4                                                                              | 4.5                                                                               | 5.0                                                                               | 59.0                                                                              | 15.4                                                                              | 16.9                                                                              | 54.7                                                                               | 0.0                                                                                 | 0.0                                                                                 | 53.9                                                                                | 0.0                                                                                 | 53.4                                                                                |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | B                                                                                 | B                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2060                                                                              |                                                                                   | 3800                                                                              |                                                                                   |                                                                                   |                                                                                   | 22                                                                                 |                                                                                     | 13                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 4.8                                                                               |                                                                                   | 16.1                                                                              |                                                                                   |                                                                                   |                                                                                   | 54.7                                                                               |                                                                                     | 53.9                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   | D                                                                                  |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                  |                                                                                     | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.5                                                                              |                                                                                   | 6.2                                                                               |                                                                                   | 102.3                                                                             |                                                                                   | 11.5                                                                               |                                                                                     | 13.5                                                                                |                                                                                     | 95.0                                                                                |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | * 4.2                                                                             |                                                                                   | 6.5                                                                               |                                                                                   | 4.6                                                                                |                                                                                     | 6.5                                                                                 |                                                                                     | * 6.5                                                                               |                                                                                     |
| Max Green Setting (Gmax), s  | 10.8                                                                              |                                                                                   | * 5.2                                                                             |                                                                                   | 88.7                                                                              |                                                                                   | 10.8                                                                               |                                                                                     | 5.0                                                                                 |                                                                                     | * 89                                                                                |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.5                                                                               |                                                                                   | 3.0                                                                               |                                                                                   | 17.1                                                                              |                                                                                   | 2.8                                                                                |                                                                                     | 2.3                                                                                 |                                                                                     | 79.1                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 23.4                                                                              |                                                                                   | 0.0                                                                                |                                                                                     | 0.0                                                                                 |                                                                                     | 9.2                                                                                 |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 12.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL   | EBT   | WBT   | NBR   | Ø7   |
|----------------------|-------|-------|-------|-------|------|
| Lane Configurations  |       |       |       |       |      |
| Traffic Volume (vph) | 4     | 3361  | 2879  | 8     |      |
| Future Volume (vph)  | 4     | 3361  | 2879  | 8     |      |
| Turn Type            | Prot  | NA    | NA    | Prot  |      |
| Protected Phases     | 5     | 2     | 6     | 3     | 7    |
| Permitted Phases     |       |       |       |       |      |
| Detector Phase       | 5     | 2     | 6     | 3     |      |
| Switch Phase         |       |       |       |       |      |
| Minimum Initial (s)  | 5.0   | 10.0  | 10.0  | 5.0   | 5.0  |
| Minimum Split (s)    | 9.6   | 26.6  | 26.6  | 9.1   | 9.1  |
| Total Split (s)      | 12.0  | 108.0 | 96.0  | 12.0  | 12.0 |
| Total Split (%)      | 10.0% | 90.0% | 80.0% | 10.0% | 10%  |
| Yellow Time (s)      | 3.6   | 3.6   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0   | 1.0   | 1.0   | 0.5   | 0.5  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.6   | 4.6   | 4.6   | 4.1   |      |
| Lead/Lag             | Lead  |       | Lag   |       |      |
| Lead-Lag Optimize?   | Yes   |       | Yes   |       |      |
| Recall Mode          | None  | None  | None  | None  | None |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 104.9

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|       |      |
|-------|------|
| Ø2    | Ø3   |
| 108 s | 12 s |
| Ø5    | Ø6   |
| 12 s  | 96 s |
|       | 12 s |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

08/11/2020

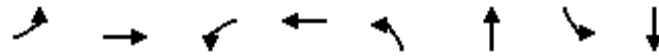
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|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |  |                                                                                     |                                                                                     |  |
| Traffic Volume (veh/h)       | 4                                                                                 | 3361                                                                              | 5                                                                                 | 0                                                                                 | 2879                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 3361                                                                              | 5                                                                                 | 0                                                                                 | 2879                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                   | 0                                                                                   | 1900                                                                                | 0                                                                                   | 0                                                                                   | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 3653                                                                              | 5                                                                                 | 0                                                                                 | 3129                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 10                                                                                | 5415                                                                              | 7                                                                                 | 0                                                                                 | 5118                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.95                                                                              | 0.95                                                                              | 0.00                                                                              | 0.90                                                                              | 0.00                                                                              | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5691                                                                              | 8                                                                                 | 0                                                                                 | 5700                                                                              | 0                                                                                 |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Grp Volume(v), veh/h         | 4                                                                                 | 2439                                                                              | 1219                                                                              | 0                                                                                 | 3129                                                                              | 0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                              | 1899                                                                              | 0                                                                                 | 1900                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Q Serve(g_s), s              | 0.2                                                                               | 8.2                                                                               | 8.3                                                                               | 0.0                                                                               | 11.8                                                                              | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 8.2                                                                               | 8.3                                                                               | 0.0                                                                               | 11.8                                                                              | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Grp Cap(c), veh/h       | 10                                                                                | 3616                                                                              | 1807                                                                              | 0                                                                                 | 5118                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| V/C Ratio(X)                 | 0.42                                                                              | 0.67                                                                              | 0.67                                                                              | 0.00                                                                              | 0.61                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Avail Cap(c_a), veh/h        | 141                                                                               | 4135                                                                              | 2066                                                                              | 0                                                                                 | 5483                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Uniform Delay (d), s/veh     | 47.1                                                                              | 0.3                                                                               | 0.3                                                                               | 0.0                                                                               | 1.1                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Incr Delay (d2), s/veh       | 10.5                                                                              | 0.4                                                                               | 0.7                                                                               | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.2                                                                               | 0.4                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 57.6                                                                              | 0.7                                                                               | 1.0                                                                               | 0.0                                                                               | 1.3                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp LOS                    | E                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Vol, veh/h          | 3662                                                                              |                                                                                   | 3129                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.9                                                                               |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 95.0                                                                              |                                                                                   | 5.1                                                                               |                                                                                   |                                                                                   |                                                                                   | 89.9                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 103.4                                                                             |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   |                                                                                   | 91.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 10.3                                                                              |                                                                                   | 2.2                                                                               |                                                                                   |                                                                                   |                                                                                   | 13.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 80.2                                                                              |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   | 60.7                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 2    | 3367  | 27   | 2874  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2    | 3367  | 27   | 2874  | 2     | 0     | 37    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 9.1  | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 7.6% | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lead | Lag   | Lead | Lag   |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

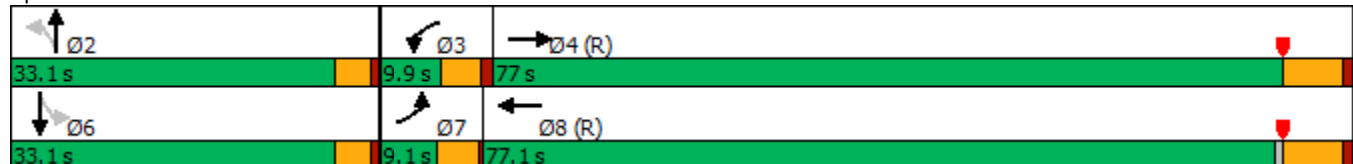
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 2                                                                                 | 3367                                                                              | 14                                                                                | 27                                                                                | 2874                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 11                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)        | 2                                                                                 | 3367                                                                              | 14                                                                                | 27                                                                                | 2874                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 11                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 2                                                                                 | 3660                                                                              | 15                                                                                | 29                                                                                | 3124                                                                              | 17                                                                                | 2                                                                                  | 0                                                                                   | 12                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 5                                                                                 | 4070                                                                              | 17                                                                                | 47                                                                                | 4209                                                                              | 23                                                                                | 41                                                                                 | 13                                                                                  | 116                                                                                 | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.76                                                                              | 0.76                                                                              | 0.03                                                                              | 0.79                                                                              | 0.79                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5332                                                                              | 22                                                                                | 1810                                                                              | 5324                                                                              | 29                                                                                | 80                                                                                 | 152                                                                                 | 1391                                                                                | 1424                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 2                                                                                 | 2372                                                                              | 1303                                                                              | 29                                                                                | 2027                                                                              | 1114                                                                              | 14                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1896                                                                              | 1810                                                                              | 1729                                                                              | 1895                                                                              | 1623                                                                               | 0                                                                                   | 0                                                                                   | 1424                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 62.0                                                                              | 62.4                                                                              | 1.9                                                                               | 35.6                                                                              | 35.8                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 62.0                                                                              | 62.4                                                                              | 1.9                                                                               | 35.6                                                                              | 35.8                                                                              | 0.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.9                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.14                                                                               |                                                                                     | 0.86                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 5                                                                                 | 2640                                                                              | 1447                                                                              | 47                                                                                | 2734                                                                              | 1498                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                 | 0.41                                                                              | 0.90                                                                              | 0.90                                                                              | 0.62                                                                              | 0.74                                                                              | 0.74                                                                              | 0.08                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2640                                                                              | 1447                                                                              | 80                                                                                | 2734                                                                              | 1498                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.71                                                                              | 0.71                                                                              | 0.71                                                                              | 0.32                                                                              | 0.32                                                                              | 0.32                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.7                                                                              | 10.7                                                                              | 10.7                                                                              | 57.9                                                                              | 6.4                                                                               | 6.4                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh       | 35.0                                                                              | 3.9                                                                               | 6.9                                                                               | 1.6                                                                               | 0.6                                                                               | 1.1                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 16.1                                                                              | 19.0                                                                              | 0.9                                                                               | 7.5                                                                               | 8.6                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 94.8                                                                              | 14.6                                                                              | 17.7                                                                              | 59.5                                                                              | 7.0                                                                               | 7.5                                                                               | 51.1                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                    | F                                                                                 | B                                                                                 | B                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 3677                                                                              |                                                                                   |                                                                                   |                                                                                   | 3170                                                                              |                                                                                   |                                                                                    |                                                                                     | 14                                                                                  |                                                                                     | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 15.8                                                                              |                                                                                   |                                                                                   |                                                                                   | 7.6                                                                               |                                                                                   |                                                                                    |                                                                                     | 51.1                                                                                |                                                                                     | 52.1                                                                                |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    |                                                                                     | D                                                                                   |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 | 7                                                                                  | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.2                                                                              |                                                                                   | 7.7                                                                               | 98.1                                                                              |                                                                                   | 14.2                                                                              | 4.4                                                                                | 101.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             |                                                                                   | 4.6                                                                               | 6.5                                                                               |                                                                                   | * 4.2                                                                             | 4.1                                                                                | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 29                                                                              |                                                                                   | 5.3                                                                               | 70.5                                                                              |                                                                                   | * 29                                                                              | 5.0                                                                                | 70.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.9                                                                               |                                                                                   | 3.9                                                                               | 64.4                                                                              |                                                                                   | 4.9                                                                               | 2.1                                                                                | 37.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 6.0                                                                               |                                                                                   | 0.1                                                                               | 0.0                                                                                | 28.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 12.3                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queuing and Blocking Report

Horizon Year (2040) With Project (Alt. 1) - AM Peak Hour WITH IMPROVEMENTS

08/11/2020

### Intersection: 3: Private Driveway & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB  | WB  | NB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | L   | T   | T   | TR  | T   | T   | TR  | R   |
| Maximum Queue (ft)    | 29  | 52  | 74  | 53  | 498 | 503 | 494 | 31  |
| Average Queue (ft)    | 5   | 3   | 3   | 2   | 33  | 35  | 43  | 5   |
| 95th Queue (ft)       | 22  | 21  | 26  | 18  | 181 | 188 | 195 | 22  |
| Link Distance (ft)    |     | 592 | 592 | 592 | 528 | 528 | 528 | 346 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) | 150 |     |     |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |

### Intersection: 4: Vista Grande Dr. & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB   | WB   | WB   | NB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|------|------|------|-----|-----|
| Directions Served     | L   | T   | T   | TR  | L   | T    | T    | TR   | LTR | L   |
| Maximum Queue (ft)    | 49  | 138 | 114 | 141 | 72  | 3894 | 3893 | 969  | 31  | 52  |
| Average Queue (ft)    | 2   | 14  | 19  | 11  | 15  | 349  | 226  | 116  | 14  | 16  |
| 95th Queue (ft)       | 16  | 61  | 66  | 56  | 44  | 1956 | 1408 | 506  | 38  | 43  |
| Link Distance (ft)    |     | 528 | 528 | 528 |     | 4017 | 4017 | 4017 | 846 |     |
| Upstream Blk Time (%) |     |     |     |     |     |      |      |      |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |      |      |      |     |     |
| Storage Bay Dist (ft) | 155 |     |     |     | 155 |      |      |      |     | 150 |
| Storage Blk Time (%)  |     | 0   |     |     |     | 3    |      |      |     |     |
| Queuing Penalty (veh) |     | 0   |     |     |     | 0    |      |      |     |     |

### Zone Summary

Zone wide Queuing Penalty: 0

## Queuing and Blocking Report

Horizon Year (2040) With Project (Alt. 1) - PM Peak Hour WITH IMPROVEMENTS

08/11/2020

### Intersection: 3: Private Driveway & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB  | WB  | NB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | L   | T   | T   | TR  | T   | T   | TR  | R   |
| Maximum Queue (ft)    | 31  | 624 | 580 | 524 | 76  | 90  | 70  | 53  |
| Average Queue (ft)    | 4   | 43  | 57  | 37  | 8   | 9   | 8   | 9   |
| 95th Queue (ft)       | 21  | 285 | 316 | 237 | 39  | 43  | 40  | 36  |
| Link Distance (ft)    |     | 598 | 598 | 598 | 542 | 542 | 542 | 279 |
| Upstream Blk Time (%) |     | 0   | 0   |     |     |     |     |     |
| Queuing Penalty (veh) |     | 0   | 0   |     |     |     |     |     |
| Storage Bay Dist (ft) | 150 |     |     |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |

### Intersection: 4: Vista Grande Dr. & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB   | WB   | WB   | NB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----|
| Directions Served     | L   | T   | T   | TR  | L   | T    | T    | TR   | LTR | L   | TR  |
| Maximum Queue (ft)    | 31  | 366 | 378 | 384 | 71  | 95   | 94   | 76   | 31  | 71  | 31  |
| Average Queue (ft)    | 3   | 157 | 173 | 181 | 29  | 30   | 28   | 31   | 10  | 25  | 3   |
| 95th Queue (ft)       | 16  | 311 | 330 | 332 | 60  | 76   | 67   | 74   | 34  | 57  | 18  |
| Link Distance (ft)    |     | 542 | 542 | 542 |     | 3997 | 3997 | 3997 | 839 |     | 778 |
| Upstream Blk Time (%) |     |     |     |     |     |      |      |      |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |      |      |      |     |     |     |
| Storage Bay Dist (ft) | 155 |     |     |     | 155 |      |      |      |     | 150 |     |
| Storage Blk Time (%)  |     | 7   |     |     |     |      |      |      |     |     |     |
| Queuing Penalty (veh) |     | 0   |     |     |     |      |      |      |     |     |     |

### Zone Summary

Zone wide Queuing Penalty: 0

**APPENDIX 8.2:**

**SUPPLEMENTAL ANALYSIS (ALTERNATIVE 2) WORKSHEETS**

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Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL  | EBT   | WBT   | NBR   | Ø4   |
|----------------------|------|-------|-------|-------|------|
| Lane Configurations  |      |       |       |       |      |
| Traffic Volume (vph) | 5    | 1226  | 2506  | 6     |      |
| Future Volume (vph)  | 5    | 1226  | 2506  | 6     |      |
| Turn Type            | Prot | NA    | NA    | Prot  |      |
| Protected Phases     | 5    | 2     | 6     | 3     | 4    |
| Permitted Phases     |      |       |       |       |      |
| Detector Phase       | 5    | 2     | 6     | 3     |      |
| Switch Phase         |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.6  | 26.6  | 26.6  | 14.1  | 14.6 |
| Total Split (s)      | 10.0 | 105.4 | 95.4  | 14.6  | 14.6 |
| Total Split (%)      | 7.4% | 78.3% | 70.9% | 10.8% | 11%  |
| Yellow Time (s)      | 3.6  | 3.6   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 0.5   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.6  | 4.6   | 4.6   | 4.1   |      |
| Lead/Lag             | Lead |       | Lag   | Lead  | Lag  |
| Lead-Lag Optimize?   | Yes  |       | Yes   | Yes   | Yes  |
| Recall Mode          | None | None  | None  | None  | None |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 63.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|         |    |        |    |        |  |        |
|---------|----|--------|----|--------|--|--------|
|         | Ø2 |        |    | Ø3     |  | Ø4     |
| 105.4 s |    |        |    | 14.6 s |  | 14.6 s |
|         | Ø5 |        | Ø6 |        |  |        |
| 10 s    |    | 95.4 s |    |        |  |        |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 5                                                                                 | 1226                                                                              | 7                                                                                 | 0                                                                                 | 2506                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1226                                                                              | 7                                                                                 | 0                                                                                 | 2506                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1333                                                                              | 8                                                                                 | 0                                                                                 | 2724                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 4974                                                                              | 30                                                                                | 0                                                                                 | 4478                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.93                                                                              | 0.93                                                                              | 0.00                                                                              | 0.86                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5320                                                                              | 32                                                                                | 0                                                                                 | 5529                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                              | 0                                                                                   |
| Grp Volume(v), veh/h         | 5                                                                                 | 866                                                                               | 475                                                                               | 0                                                                                 | 2724                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1894                                                                              | 0                                                                                 | 1729                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 1.5                                                                               | 1.5                                                                               | 0.0                                                                               | 10.7                                                                              | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 1.5                                                                               | 1.5                                                                               | 0.0                                                                               | 10.7                                                                              | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 3233                                                                              | 1771                                                                              | 0                                                                                 | 4478                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.42                                                                              | 0.27                                                                              | 0.27                                                                              | 0.00                                                                              | 0.61                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 138                                                                               | 4926                                                                              | 2698                                                                              | 0                                                                                 | 6656                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 268                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 35.0                                                                              | 0.2                                                                               | 0.2                                                                               | 0.0                                                                               | 1.4                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 8.4                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 43.4                                                                              | 0.2                                                                               | 0.3                                                                               | 0.0                                                                               | 1.5                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1346                                                                              |                                                                                   |                                                                                   | 2724                                                                              |                                                                                   |                                                                                   | 0                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.4                                                                               |                                                                                   |                                                                                   | 1.5                                                                               |                                                                                   |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 5                                                                                  |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 70.8                                                                              |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 5.1                                                                                |                                                                                     |                                                                                     | 65.7                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   |                                                                                   | 4.6                                                                               |                                                                                   |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     | 4.6                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                   |                                                                                   | 10.0                                                                              |                                                                                   |                                                                                   | 5.4                                                                                |                                                                                     |                                                                                     | 90.8                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.5                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 2.2                                                                                |                                                                                     |                                                                                     | 12.7                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 10.4                                                                              |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     | 48.4                                                                                |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 1.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑↑  | ↔    | ↑↑↑↑  |       | ↔     | ↔     | ↔     |
| Traffic Volume (vph) | 1218  | 12   | 2505  | 3     | 0     | 11    | 0     |
| Future Volume (vph)  | 1218  | 12   | 2505  | 3     | 0     | 11    | 0     |
| Turn Type            | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag   | Lead |       |       |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes  |       |       |       |       |       |
| Recall Mode          | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

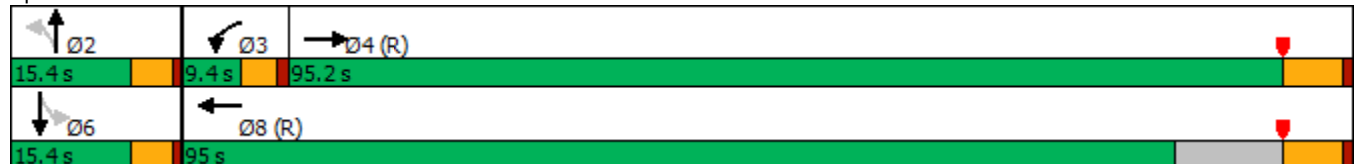
Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |                                                                                   |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)                                                                             | 0                                                                                 | 1218                                                                              | 7                                                                                 | 12                                                                                | 2505                                                                              | 39                                                                                | 3                                                                                  | 0                                                                                   | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)                                                                              | 0                                                                                 | 1218                                                                              | 7                                                                                 | 12                                                                                | 2505                                                                              | 39                                                                                | 3                                                                                  | 0                                                                                   | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                              |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 0                                                                                 | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                               | 0                                                                                 | 1324                                                                              | 8                                                                                 | 13                                                                                | 2723                                                                              | 42                                                                                | 3                                                                                  | 0                                                                                   | 15                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor                                                                                   | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                         | 0                                                                                 | 5431                                                                              | 33                                                                                | 27                                                                                | 4493                                                                              | 69                                                                                | 42                                                                                 | 7                                                                                   | 72                                                                                  | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| Arrive On Green                                                                                    | 0.00                                                                              | 0.80                                                                              | 0.80                                                                              | 0.01                                                                              | 0.85                                                                              | 0.85                                                                              | 0.05                                                                               | 0.00                                                                                | 0.05                                                                                | 0.05                                                                                | 0.00                                                                                | 0.05                                                                                |
| Sat Flow, veh/h                                                                                    | 0                                                                                 | 7020                                                                              | 41                                                                                | 1810                                                                              | 5263                                                                              | 81                                                                                | 130                                                                                | 139                                                                                 | 1347                                                                                | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h                                                                               | 0                                                                                 | 961                                                                               | 371                                                                               | 13                                                                                | 1785                                                                              | 980                                                                               | 18                                                                                 | 0                                                                                   | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln                                                                           | 0                                                                                 | 1634                                                                              | 1893                                                                              | 1810                                                                              | 1729                                                                              | 1885                                                                              | 1616                                                                               | 0                                                                                   | 0                                                                                   | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s                                                                                    | 0.0                                                                               | 5.7                                                                               | 5.7                                                                               | 0.9                                                                               | 18.7                                                                              | 19.0                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s                                                                              | 0.0                                                                               | 5.7                                                                               | 5.7                                                                               | 0.9                                                                               | 18.7                                                                              | 19.0                                                                              | 1.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                                                                                       | 0.00                                                                              |                                                                                   | 0.02                                                                              | 1.00                                                                              |                                                                                   | 0.04                                                                              | 0.17                                                                               |                                                                                     | 0.83                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                             | 0                                                                                 | 3942                                                                              | 1522                                                                              | 27                                                                                | 2953                                                                              | 1610                                                                              | 122                                                                                | 0                                                                                   | 0                                                                                   | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| V/C Ratio(X)                                                                                       | 0.00                                                                              | 0.24                                                                              | 0.24                                                                              | 0.49                                                                              | 0.60                                                                              | 0.61                                                                              | 0.15                                                                               | 0.00                                                                                | 0.00                                                                                | 0.09                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h                                                                              | 0                                                                                 | 3942                                                                              | 1522                                                                              | 78                                                                                | 2953                                                                              | 1610                                                                              | 179                                                                                | 0                                                                                   | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                 | 0.00                                                                              | 0.97                                                                              | 0.97                                                                              | 0.48                                                                              | 0.48                                                                              | 0.48                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                           | 0.0                                                                               | 2.9                                                                               | 2.9                                                                               | 58.7                                                                              | 2.7                                                                               | 2.7                                                                               | 54.3                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.1                                                                                | 0.0                                                                                 | 53.8                                                                                |
| Incr Delay (d2), s/veh                                                                             | 0.0                                                                               | 0.1                                                                               | 0.4                                                                               | 2.5                                                                               | 0.4                                                                               | 0.8                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                           | 0.0                                                                               | 1.1                                                                               | 1.3                                                                               | 0.4                                                                               | 1.8                                                                               | 2.1                                                                               | 0.5                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 0.0                                                                               | 3.0                                                                               | 3.2                                                                               | 61.2                                                                              | 3.1                                                                               | 3.5                                                                               | 54.9                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.3                                                                                | 0.0                                                                                 | 53.8                                                                                |
| LnGrp LOS                                                                                          | A                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h                                                                                |                                                                                   | 1332                                                                              |                                                                                   |                                                                                   | 2778                                                                              |                                                                                   |                                                                                    | 18                                                                                  |                                                                                     |                                                                                     | 13                                                                                  |                                                                                     |
| Approach Delay, s/veh                                                                              |                                                                                   | 3.1                                                                               |                                                                                   |                                                                                   | 3.5                                                                               |                                                                                   |                                                                                    | 54.9                                                                                |                                                                                     |                                                                                     | 54.3                                                                                |                                                                                     |
| Approach LOS                                                                                       |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                               |                                                                                   | 2                                                                                 | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           |                                                                                   | 11.0                                                                              | 6.0                                                                               | 103.0                                                                             |                                                                                   | 11.0                                                                              |                                                                                    | 109.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            |                                                                                   | 4.6                                                                               | * 4.2                                                                             | 6.5                                                                               |                                                                                   | 4.6                                                                               |                                                                                    | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        |                                                                                   | 10.8                                                                              | * 5.2                                                                             | 88.7                                                                              |                                                                                   | 10.8                                                                              |                                                                                    | 88.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       |                                                                                   | 3.3                                                                               | 2.9                                                                               | 7.7                                                                               |                                                                                   | 2.8                                                                               |                                                                                    | 21.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            |                                                                                   | 0.0                                                                               | 0.0                                                                               | 10.3                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 42.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 |                                                                                   |                                                                                   | 3.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL  | EBT   | WBT   | NBR   | Ø4   |
|----------------------|------|-------|-------|-------|------|
| Lane Configurations  |      |       |       |       |      |
| Traffic Volume (vph) | 3    | 2314  | 1939  | 7     |      |
| Future Volume (vph)  | 3    | 2314  | 1939  | 7     |      |
| Turn Type            | Prot | NA    | NA    | Prot  |      |
| Protected Phases     | 5    | 2     | 6     | 3     | 4    |
| Permitted Phases     |      |       |       |       |      |
| Detector Phase       | 5    | 2     | 6     | 3     |      |
| Switch Phase         |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.6  | 26.6  | 26.6  | 14.1  | 14.6 |
| Total Split (s)      | 12.0 | 105.4 | 93.4  | 14.6  | 14.6 |
| Total Split (%)      | 8.9% | 78.3% | 69.4% | 10.8% | 11%  |
| Yellow Time (s)      | 3.6  | 3.6   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 0.5   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.6  | 4.6   | 4.6   | 4.1   |      |
| Lead/Lag             | Lead |       | Lag   | Lead  | Lag  |
| Lead-Lag Optimize?   | Yes  |       | Yes   | Yes   | Yes  |
| Recall Mode          | None | None  | None  | None  | None |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 50.8

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|         |        |        |        |
|---------|--------|--------|--------|
|         |        |        |        |
| 105.4 s |        | 14.6 s | 14.6 s |
|         |        |        |        |
| 12 s    | 93.4 s |        |        |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 3                                                                                 | 2314                                                                              | 4                                                                                 | 0                                                                                 | 1939                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2314                                                                              | 4                                                                                 | 0                                                                                 | 1939                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2515                                                                              | 4                                                                                 | 0                                                                                 | 2108                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 7                                                                                 | 4865                                                                              | 8                                                                                 | 0                                                                                 | 4230                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 4                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.00                                                                              | 0.91                                                                              | 0.91                                                                              | 0.00                                                                              | 0.82                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5348                                                                              | 9                                                                                 | 0                                                                                 | 5529                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                              | 0                                                                                   |
| Grp Volume(v), veh/h         | 3                                                                                 | 1626                                                                              | 893                                                                               | 0                                                                                 | 2108                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1898                                                                              | 0                                                                                 | 1729                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.1                                                                               | 4.1                                                                               | 4.1                                                                               | 0.0                                                                               | 6.4                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 4.1                                                                               | 4.1                                                                               | 0.0                                                                               | 6.4                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.00                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 7                                                                                 | 3146                                                                              | 1727                                                                              | 0                                                                                 | 4230                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 4                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.41                                                                              | 0.52                                                                              | 0.52                                                                              | 0.00                                                                              | 0.50                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 263                                                                               | 6837                                                                              | 3753                                                                              | 0                                                                                 | 9034                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 373                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 25.3                                                                              | 0.4                                                                               | 0.4                                                                               | 0.0                                                                               | 1.5                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 12.8                                                                              | 0.1                                                                               | 0.2                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.1                                                                               | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 38.1                                                                              | 0.5                                                                               | 0.6                                                                               | 0.0                                                                               | 1.6                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 2522                                                                              |                                                                                   | 2108                                                                              |                                                                                   |                                                                                   | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.6                                                                               |                                                                                   | 1.6                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 51.0                                                                              |                                                                                   | 0.0                                                                               | 4.8                                                                               | 46.2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                   | 10.0                                                                              | 7.4                                                                               | 88.8                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 6.1                                                                               |                                                                                   | 0.0                                                                               | 2.1                                                                               | 8.4                                                                               |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 40.3                                                                              |                                                                                   | 0.0                                                                               | 0.0                                                                               | 28.2                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑↑  | ↰    | ↑↑↑↑  |       | ↱     | ↰     | ↱     |
| Traffic Volume (vph) | 2304  | 23   | 1930  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2304  | 23   | 1930  | 2     | 0     | 37    | 0     |
| Turn Type            | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lag   | Lead |       |       |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes  |       |       |       |       |       |
| Recall Mode          | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

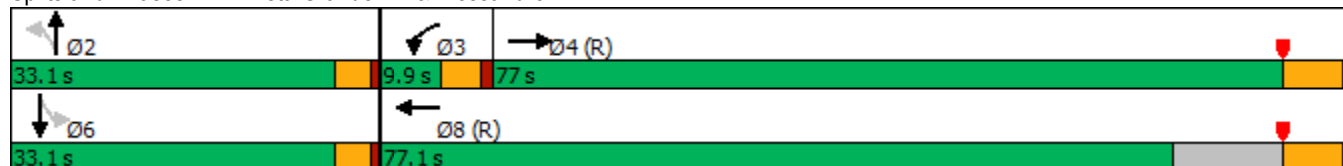
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |                                                                                   |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)                                                                             | 0                                                                                 | 2304                                                                              | 12                                                                                | 23                                                                                | 1930                                                                              | 18                                                                                | 2                                                                                  | 0                                                                                   | 9                                                                                   | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)                                                                              | 0                                                                                 | 2304                                                                              | 12                                                                                | 23                                                                                | 1930                                                                              | 18                                                                                | 2                                                                                  | 0                                                                                   | 9                                                                                   | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                              |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 0                                                                                 | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                               | 0                                                                                 | 2504                                                                              | 13                                                                                | 25                                                                                | 2098                                                                              | 20                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor                                                                                   | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                         | 0                                                                                 | 5176                                                                              | 27                                                                                | 43                                                                                | 4384                                                                              | 42                                                                                | 44                                                                                 | 14                                                                                  | 113                                                                                 | 181                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green                                                                                    | 0.00                                                                              | 0.77                                                                              | 0.77                                                                              | 0.02                                                                              | 0.83                                                                              | 0.83                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h                                                                                    | 0                                                                                 | 7027                                                                              | 35                                                                                | 1810                                                                              | 5298                                                                              | 50                                                                                | 106                                                                                | 165                                                                                 | 1352                                                                                | 1427                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h                                                                               | 0                                                                                 | 1815                                                                              | 702                                                                               | 25                                                                                | 1369                                                                              | 749                                                                               | 12                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln                                                                           | 0                                                                                 | 1634                                                                              | 1894                                                                              | 1810                                                                              | 1729                                                                              | 1891                                                                              | 1622                                                                               | 0                                                                                   | 0                                                                                   | 1427                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s                                                                                    | 0.0                                                                               | 16.5                                                                              | 16.6                                                                              | 1.6                                                                               | 13.6                                                                              | 13.6                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s                                                                              | 0.0                                                                               | 16.5                                                                              | 16.6                                                                              | 1.6                                                                               | 13.6                                                                              | 13.6                                                                              | 0.8                                                                                | 0.0                                                                                 | 0.0                                                                                 | 3.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                                                                                       | 0.00                                                                              |                                                                                   | 0.02                                                                              | 1.00                                                                              |                                                                                   | 0.03                                                                              | 0.17                                                                               |                                                                                     | 0.83                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                             | 0                                                                                 | 3753                                                                              | 1450                                                                              | 43                                                                                | 2861                                                                              | 1565                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 181                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                                                                                       | 0.00                                                                              | 0.48                                                                              | 0.48                                                                              | 0.59                                                                              | 0.48                                                                              | 0.48                                                                              | 0.07                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h                                                                              | 0                                                                                 | 3753                                                                              | 1450                                                                              | 80                                                                                | 2861                                                                              | 1565                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                 | 0.00                                                                              | 0.85                                                                              | 0.85                                                                              | 0.73                                                                              | 0.73                                                                              | 0.73                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                           | 0.0                                                                               | 5.2                                                                               | 5.2                                                                               | 58.0                                                                              | 3.0                                                                               | 3.0                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh                                                                             | 0.0                                                                               | 0.4                                                                               | 1.0                                                                               | 3.4                                                                               | 0.4                                                                               | 0.8                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                           | 0.0                                                                               | 3.8                                                                               | 4.7                                                                               | 0.8                                                                               | 2.1                                                                               | 2.5                                                                               | 0.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 0.0                                                                               | 5.6                                                                               | 6.2                                                                               | 61.5                                                                              | 3.4                                                                               | 3.7                                                                               | 51.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                                                                                          | A                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h                                                                                |                                                                                   | 2517                                                                              |                                                                                   |                                                                                   | 2143                                                                              |                                                                                   |                                                                                    | 12                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh                                                                              |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                   | 4.2                                                                               |                                                                                   |                                                                                    | 51.0                                                                                |                                                                                     |                                                                                     | 52.1                                                                                |                                                                                     |
| Approach LOS                                                                                       |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                               |                                                                                   | 2                                                                                 | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           |                                                                                   | 14.2                                                                              | 7.4                                                                               | 98.4                                                                              |                                                                                   | 14.2                                                                              |                                                                                    | 105.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            |                                                                                   | * 4.2                                                                             | 4.6                                                                               | 6.5                                                                               |                                                                                   | * 4.2                                                                             |                                                                                    | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        |                                                                                   | * 29                                                                              | 5.3                                                                               | 70.5                                                                              |                                                                                   | * 29                                                                              |                                                                                    | 70.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       |                                                                                   | 2.8                                                                               | 3.6                                                                               | 18.6                                                                              |                                                                                   | 5.0                                                                               |                                                                                    | 15.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            |                                                                                   | 0.0                                                                               | 0.0                                                                               | 29.2                                                                              |                                                                                   | 0.1                                                                               |                                                                                    | 23.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 |                                                                                   |                                                                                   | 5.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL  | EBT   | WBT   | NBR   | Ø4   |
|----------------------|------|-------|-------|-------|------|
| Lane Configurations  |      |       |       |       |      |
| Traffic Volume (vph) | 5    | 1603  | 2852  | 6     |      |
| Future Volume (vph)  | 5    | 1603  | 2852  | 6     |      |
| Turn Type            | Prot | NA    | NA    | Prot  |      |
| Protected Phases     | 5    | 2     | 6     | 3     | 4    |
| Permitted Phases     |      |       |       |       |      |
| Detector Phase       | 5    | 2     | 6     | 3     |      |
| Switch Phase         |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.6  | 26.6  | 26.6  | 14.1  | 14.6 |
| Total Split (s)      | 10.0 | 105.4 | 95.4  | 14.6  | 14.6 |
| Total Split (%)      | 7.4% | 78.3% | 70.9% | 10.8% | 11%  |
| Yellow Time (s)      | 3.6  | 3.6   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 0.5   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.6  | 4.6   | 4.6   | 4.1   |      |
| Lead/Lag             | Lead |       | Lag   | Lead  | Lag  |
| Lead-Lag Optimize?   | Yes  |       | Yes   | Yes   | Yes  |
| Recall Mode          | None | None  | None  | None  | Min  |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 106.8

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|         |        |        |        |
|---------|--------|--------|--------|
| Ø2      |        | Ø3     | Ø4     |
| 105.4 s |        | 14.6 s | 14.6 s |
| Ø5      | Ø6     |        |        |
| 10 s    | 95.4 s |        |        |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                     |                                                                                     |  |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 5                                                                                 | 1603                                                                              | 7                                                                                 | 0                                                                                 | 2852                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1603                                                                              | 7                                                                                 | 0                                                                                 | 2852                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                 | 1900                                                                              | 1900                                                                              | 0                                                                                   | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1742                                                                              | 8                                                                                 | 0                                                                                 | 3100                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 5038                                                                              | 23                                                                                | 0                                                                                 | 4586                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.95                                                                              | 0.95                                                                              | 0.00                                                                              | 0.88                                                                              | 0.00                                                                              | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5329                                                                              | 24                                                                                | 0                                                                                 | 5529                                                                              | 0                                                                                 |                                                                                     | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                              | 0                                                                                   |
| Grp Volume(v), veh/h         | 5                                                                                 | 1130                                                                              | 620                                                                               | 0                                                                                 | 3100                                                                              | 0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1896                                                                              | 0                                                                                 | 1729                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 2.2                                                                               | 2.2                                                                               | 0.0                                                                               | 14.5                                                                              | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 2.2                                                                               | 2.2                                                                               | 0.0                                                                               | 14.5                                                                              | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 3269                                                                              | 1792                                                                              | 0                                                                                 | 4586                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 2                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.42                                                                              | 0.35                                                                              | 0.35                                                                              | 0.00                                                                              | 0.68                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 116                                                                               | 4138                                                                              | 2269                                                                              | 0                                                                                 | 5592                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 226                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 41.7                                                                              | 0.2                                                                               | 0.2                                                                               | 0.0                                                                               | 1.4                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 8.6                                                                               | 0.1                                                                               | 0.1                                                                               | 0.0                                                                               | 0.2                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 50.3                                                                              | 0.2                                                                               | 0.3                                                                               | 0.0                                                                               | 1.6                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                     |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1755                                                                              |                                                                                   |                                                                                   | 3100                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.4                                                                               |                                                                                   |                                                                                   | 1.6                                                                               |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 5                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 84.2                                                                              |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 5.2                                                                                 |                                                                                     |                                                                                     | 79.1                                                                                |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   |                                                                                   | 4.6                                                                               |                                                                                   |                                                                                   | 4.6                                                                                 |                                                                                     |                                                                                     | 4.6                                                                                 |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                   |                                                                                   | 10.0                                                                              |                                                                                   |                                                                                   | 5.4                                                                                 |                                                                                     |                                                                                     | 90.8                                                                                |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 4.2                                                                               |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 2.2                                                                                 |                                                                                     |                                                                                     | 16.5                                                                                |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 17.1                                                                              |                                                                                   |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                                 |                                                                                     |                                                                                     | 58.0                                                                                |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 1.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑↑  | ↰    | ↑↑↑↑  |       | ↱     | ↰     | ↱     |
| Traffic Volume (vph) | 1595  | 13   | 2851  | 3     | 0     | 11    | 0     |
| Future Volume (vph)  | 1595  | 13   | 2851  | 3     | 0     | 11    | 0     |
| Turn Type            | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag   | Lead |       |       |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes  |       |       |       |       |       |
| Recall Mode          | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

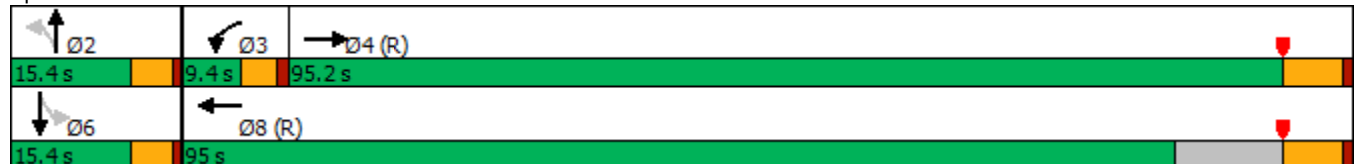
Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |                                                                                   |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)                                                                             | 0                                                                                 | 1595                                                                              | 8                                                                                 | 13                                                                                | 2851                                                                              | 39                                                                                | 3                                                                                  | 0                                                                                   | 15                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)                                                                              | 0                                                                                 | 1595                                                                              | 8                                                                                 | 13                                                                                | 2851                                                                              | 39                                                                                | 3                                                                                  | 0                                                                                   | 15                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                              |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 0                                                                                 | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                               | 0                                                                                 | 1734                                                                              | 9                                                                                 | 14                                                                                | 3099                                                                              | 42                                                                                | 3                                                                                  | 0                                                                                   | 16                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor                                                                                   | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                         | 0                                                                                 | 5424                                                                              | 28                                                                                | 28                                                                                | 4498                                                                              | 61                                                                                | 41                                                                                 | 7                                                                                   | 74                                                                                  | 142                                                                                 | 0                                                                                   | 88                                                                                  |
| Arrive On Green                                                                                    | 0.00                                                                              | 0.80                                                                              | 0.80                                                                              | 0.02                                                                              | 0.85                                                                              | 0.85                                                                              | 0.05                                                                               | 0.00                                                                                | 0.05                                                                                | 0.05                                                                                | 0.00                                                                                | 0.05                                                                                |
| Sat Flow, veh/h                                                                                    | 0                                                                                 | 7027                                                                              | 35                                                                                | 1810                                                                              | 5274                                                                              | 71                                                                                | 122                                                                                | 133                                                                                 | 1361                                                                                | 1419                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h                                                                               | 0                                                                                 | 1257                                                                              | 486                                                                               | 14                                                                                | 2027                                                                              | 1114                                                                              | 19                                                                                 | 0                                                                                   | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln                                                                           | 0                                                                                 | 1634                                                                              | 1894                                                                              | 1810                                                                              | 1729                                                                              | 1887                                                                              | 1616                                                                               | 0                                                                                   | 0                                                                                   | 1419                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s                                                                                    | 0.0                                                                               | 8.2                                                                               | 8.2                                                                               | 0.9                                                                               | 25.0                                                                              | 25.4                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s                                                                              | 0.0                                                                               | 8.2                                                                               | 8.2                                                                               | 0.9                                                                               | 25.0                                                                              | 25.4                                                                              | 1.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                                                                                       | 0.00                                                                              |                                                                                   | 0.02                                                                              | 1.00                                                                              |                                                                                   | 0.04                                                                              | 0.16                                                                               |                                                                                     | 0.84                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                             | 0                                                                                 | 3933                                                                              | 1519                                                                              | 28                                                                                | 2949                                                                              | 1609                                                                              | 123                                                                                | 0                                                                                   | 0                                                                                   | 142                                                                                 | 0                                                                                   | 88                                                                                  |
| V/C Ratio(X)                                                                                       | 0.00                                                                              | 0.32                                                                              | 0.32                                                                              | 0.50                                                                              | 0.69                                                                              | 0.69                                                                              | 0.15                                                                               | 0.00                                                                                | 0.00                                                                                | 0.08                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h                                                                              | 0                                                                                 | 3933                                                                              | 1519                                                                              | 78                                                                                | 2949                                                                              | 1609                                                                              | 179                                                                                | 0                                                                                   | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                 | 0.00                                                                              | 0.91                                                                              | 0.91                                                                              | 0.28                                                                              | 0.28                                                                              | 0.28                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                           | 0.0                                                                               | 3.2                                                                               | 3.2                                                                               | 58.6                                                                              | 3.1                                                                               | 3.2                                                                               | 54.2                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.0                                                                                | 0.0                                                                                 | 53.7                                                                                |
| Incr Delay (d2), s/veh                                                                             | 0.0                                                                               | 0.2                                                                               | 0.5                                                                               | 1.4                                                                               | 0.4                                                                               | 0.7                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                           | 0.0                                                                               | 1.5                                                                               | 1.9                                                                               | 0.4                                                                               | 2.3                                                                               | 2.8                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 0.0                                                                               | 3.3                                                                               | 3.7                                                                               | 60.0                                                                              | 3.5                                                                               | 3.9                                                                               | 54.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.2                                                                                | 0.0                                                                                 | 53.7                                                                                |
| LnGrp LOS                                                                                          | A                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h                                                                                |                                                                                   | 1743                                                                              |                                                                                   |                                                                                   | 3155                                                                              |                                                                                   |                                                                                    | 19                                                                                  |                                                                                     |                                                                                     | 13                                                                                  |                                                                                     |
| Approach Delay, s/veh                                                                              |                                                                                   | 3.4                                                                               |                                                                                   |                                                                                   | 3.9                                                                               |                                                                                   |                                                                                    | 54.8                                                                                |                                                                                     |                                                                                     | 54.2                                                                                |                                                                                     |
| Approach LOS                                                                                       |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                               |                                                                                   | 2                                                                                 | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           |                                                                                   | 11.2                                                                              | 6.1                                                                               | 102.8                                                                             |                                                                                   | 11.2                                                                              |                                                                                    | 108.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            |                                                                                   | 4.6                                                                               | * 4.2                                                                             | 6.5                                                                               |                                                                                   | 4.6                                                                               |                                                                                    | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        |                                                                                   | 10.8                                                                              | * 5.2                                                                             | 88.7                                                                              |                                                                                   | 10.8                                                                              |                                                                                    | 88.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       |                                                                                   | 3.3                                                                               | 2.9                                                                               | 10.2                                                                              |                                                                                   | 2.8                                                                               |                                                                                    | 27.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            |                                                                                   | 0.0                                                                               | 0.0                                                                               | 16.4                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 47.8                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 |                                                                                   |                                                                                   | 4.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBT   | NBR   | Ø4   |
|----------------------|------|-------|-------|-------|------|
| Lane Configurations  |      |       |       |       |      |
| Traffic Volume (vph) | 3    | 2688  | 2416  | 7     |      |
| Future Volume (vph)  | 3    | 2688  | 2416  | 7     |      |
| Turn Type            | Prot | NA    | NA    | Prot  |      |
| Protected Phases     | 5    | 2     | 6     | 3     | 4    |
| Permitted Phases     |      |       |       |       |      |
| Detector Phase       | 5    | 2     | 6     | 3     |      |
| Switch Phase         |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.6  | 26.6  | 26.6  | 14.1  | 14.6 |
| Total Split (s)      | 12.0 | 105.4 | 93.4  | 14.6  | 14.6 |
| Total Split (%)      | 8.9% | 78.3% | 69.4% | 10.8% | 11%  |
| Yellow Time (s)      | 3.6  | 3.6   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 0.5   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.6  | 4.6   | 4.6   | 4.1   |      |
| Lead/Lag             | Lead |       | Lag   | Lead  | Lag  |
| Lead-Lag Optimize?   | Yes  |       | Yes   | Yes   | Yes  |
| Recall Mode          | None | None  | None  | None  | Min  |

### Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 99.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|         |    |        |    |        |    |        |    |
|---------|----|--------|----|--------|----|--------|----|
|         | Ø2 |        |    |        | Ø3 |        | Ø4 |
| 105.4 s |    |        |    | 14.6 s |    | 14.6 s |    |
|         | Ø5 |        | Ø6 |        |    |        |    |
| 12 s    |    | 93.4 s |    |        |    |        |    |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |   |                                                                                     |
| Traffic Volume (veh/h)       | 3                                                                                 | 2688                                                                                                                                                                                                                                                  | 4                                                                                 | 0                                                                                 | 2416                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2688                                                                                                                                                                                                                                                  | 4                                                                                 | 0                                                                                 | 2416                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2922                                                                                                                                                                                                                                                  | 4                                                                                 | 0                                                                                 | 2626                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 7                                                                                 | 4991                                                                                                                                                                                                                                                  | 7                                                                                 | 0                                                                                 | 4472                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 3                                                                                                                                                                       | 0                                                                                   |
| Arrive On Green              | 0.00                                                                              | 0.93                                                                                                                                                                                                                                                  | 0.93                                                                              | 0.00                                                                              | 0.86                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5349                                                                                                                                                                                                                                                  | 7                                                                                 | 0                                                                                 | 5529                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                                                                                                                  | 0                                                                                   |
| Grp Volume(v), veh/h         | 3                                                                                 | 1888                                                                                                                                                                                                                                                  | 1038                                                                              | 0                                                                                 | 2626                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1899                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Q Serve(g_s), s              | 0.1                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 0.0                                                                               | 9.7                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 5.5                                                                                                                                                                                                                                                   | 5.5                                                                               | 0.0                                                                               | 9.7                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                                                                                                         | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 7                                                                                 | 3227                                                                                                                                                                                                                                                  | 1772                                                                              | 0                                                                                 | 4472                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 3                                                                                                                                                                       | 0                                                                                   |
| V/C Ratio(X)                 | 0.41                                                                              | 0.59                                                                                                                                                                                                                                                  | 0.59                                                                              | 0.00                                                                              | 0.59                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 195                                                                               | 5073                                                                                                                                                                                                                                                  | 2785                                                                              | 0                                                                                 | 6703                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 277                                                                                                                                                                     | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 34.1                                                                              | 0.3                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.0                                                                               | 1.3                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 13.0                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.0                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.2                                                                               | 0.0                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 47.2                                                                              | 0.5                                                                                                                                                                                                                                                   | 0.6                                                                               | 0.0                                                                               | 1.4                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                                                                                                       | A                                                                                   |
| Approach Vol, veh/h          | 2929                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 2626                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        | 0.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 1.4                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 4                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   | 5                                                                                  |                                                                                     |                                                                                     | 6                                                                                   |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 68.7                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.9                                                                                |                                                                                     |                                                                                     | 63.8                                                                                |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.6                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     | 4.6                                                                                 |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                                                                                                                                                                                       |                                                                                   | 10.0                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 7.4                                                                                |                                                                                     |                                                                                     | 88.8                                                                                |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+l1), s | 7.5                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 2.1                                                                                |                                                                                     |                                                                                     | 11.7                                                                                |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 56.6                                                                              |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     | 44.7                                                                                |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           | 1.0                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑↑  | ↰    | ↑↑↑↑  |       | ↱     | ↰     | ↱     |
| Traffic Volume (vph) | 2677  | 25   | 2406  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2677  | 25   | 2406  | 2     | 0     | 37    | 0     |
| Turn Type            | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lag   | Lead |       |       |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes  |       |       |       |       |       |
| Recall Mode          | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

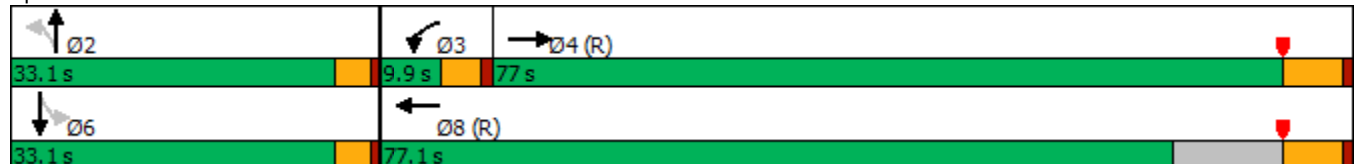
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |                                                                                   |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)                                                                             | 0                                                                                 | 2677                                                                              | 13                                                                                | 25                                                                                | 2406                                                                              | 18                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)                                                                              | 0                                                                                 | 2677                                                                              | 13                                                                                | 25                                                                                | 2406                                                                              | 18                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                              |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 0                                                                                 | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                               | 0                                                                                 | 2910                                                                              | 14                                                                                | 27                                                                                | 2615                                                                              | 20                                                                                | 2                                                                                  | 0                                                                                   | 11                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor                                                                                   | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                         | 0                                                                                 | 5170                                                                              | 25                                                                                | 45                                                                                | 4394                                                                              | 34                                                                                | 42                                                                                 | 13                                                                                  | 114                                                                                 | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green                                                                                    | 0.00                                                                              | 0.76                                                                              | 0.76                                                                              | 0.02                                                                              | 0.83                                                                              | 0.83                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h                                                                                    | 0                                                                                 | 7030                                                                              | 33                                                                                | 1810                                                                              | 5310                                                                              | 41                                                                                | 92                                                                                 | 158                                                                                 | 1373                                                                                | 1426                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h                                                                               | 0                                                                                 | 2109                                                                              | 815                                                                               | 27                                                                                | 1701                                                                              | 934                                                                               | 13                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln                                                                           | 0                                                                                 | 1634                                                                              | 1894                                                                              | 1810                                                                              | 1729                                                                              | 1893                                                                              | 1623                                                                               | 0                                                                                   | 0                                                                                   | 1426                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s                                                                                    | 0.0                                                                               | 21.3                                                                              | 21.4                                                                              | 1.8                                                                               | 20.0                                                                              | 20.1                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s                                                                              | 0.0                                                                               | 21.3                                                                              | 21.4                                                                              | 1.8                                                                               | 20.0                                                                              | 20.1                                                                              | 0.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.9                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                                                                                       | 0.00                                                                              |                                                                                   | 0.02                                                                              | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.15                                                                               |                                                                                     | 0.85                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                             | 0                                                                                 | 3747                                                                              | 1448                                                                              | 45                                                                                | 2861                                                                              | 1566                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                                                                                       | 0.00                                                                              | 0.56                                                                              | 0.56                                                                              | 0.60                                                                              | 0.59                                                                              | 0.60                                                                              | 0.08                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h                                                                              | 0                                                                                 | 3747                                                                              | 1448                                                                              | 80                                                                                | 2861                                                                              | 1566                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                 | 0.00                                                                              | 0.62                                                                              | 0.62                                                                              | 0.56                                                                              | 0.56                                                                              | 0.56                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                           | 0.0                                                                               | 5.8                                                                               | 5.8                                                                               | 57.9                                                                              | 3.5                                                                               | 3.5                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh                                                                             | 0.0                                                                               | 0.4                                                                               | 1.0                                                                               | 2.7                                                                               | 0.5                                                                               | 0.9                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                           | 0.0                                                                               | 4.9                                                                               | 5.9                                                                               | 0.8                                                                               | 3.1                                                                               | 3.6                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 0.0                                                                               | 6.2                                                                               | 6.8                                                                               | 60.6                                                                              | 4.0                                                                               | 4.5                                                                               | 51.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                                                                                          | A                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h                                                                                |                                                                                   | 2924                                                                              |                                                                                   |                                                                                   | 2662                                                                              |                                                                                   |                                                                                    | 13                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh                                                                              |                                                                                   | 6.4                                                                               |                                                                                   |                                                                                   | 4.8                                                                               |                                                                                   |                                                                                    | 51.0                                                                                |                                                                                     |                                                                                     | 52.1                                                                                |                                                                                     |
| Approach LOS                                                                                       |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                               |                                                                                   | 2                                                                                 | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           |                                                                                   | 14.2                                                                              | 7.6                                                                               | 98.2                                                                              |                                                                                   | 14.2                                                                              |                                                                                    | 105.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            |                                                                                   | * 4.2                                                                             | 4.6                                                                               | 6.5                                                                               |                                                                                   | * 4.2                                                                             |                                                                                    | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        |                                                                                   | * 29                                                                              | 5.3                                                                               | 70.5                                                                              |                                                                                   | * 29                                                                              |                                                                                    | 70.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       |                                                                                   | 2.9                                                                               | 3.8                                                                               | 23.4                                                                              |                                                                                   | 4.9                                                                               |                                                                                    | 22.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            |                                                                                   | 0.0                                                                               | 0.0                                                                               | 34.0                                                                              |                                                                                   | 0.1                                                                               |                                                                                    | 31.7                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 |                                                                                   |                                                                                   | 6.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBT   | NBR   | Ø4   |
|----------------------|------|-------|-------|-------|------|
| Lane Configurations  |      |       |       |       |      |
| Traffic Volume (vph) | 6    | 1882  | 3448  | 8     |      |
| Future Volume (vph)  | 6    | 1882  | 3448  | 8     |      |
| Turn Type            | Prot | NA    | NA    | Prot  |      |
| Protected Phases     | 5    | 2     | 6     | 3     | 4    |
| Permitted Phases     |      |       |       |       |      |
| Detector Phase       | 5    | 2     | 6     | 3     |      |
| Switch Phase         |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.6  | 26.6  | 26.6  | 14.1  | 14.6 |
| Total Split (s)      | 10.0 | 105.4 | 95.4  | 14.6  | 14.6 |
| Total Split (%)      | 7.4% | 78.3% | 70.9% | 10.8% | 11%  |
| Yellow Time (s)      | 3.6  | 3.6   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 0.5   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.6  | 4.6   | 4.6   | 4.1   |      |
| Lead/Lag             | Lead |       | Lag   | Lead  | Lag  |
| Lead-Lag Optimize?   | Yes  |       | Yes   | Yes   | Yes  |
| Recall Mode          | None | None  | None  | None  | Min  |

### Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 114.8

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|         |    |        |        |    |        |    |
|---------|----|--------|--------|----|--------|----|
|         | Ø2 |        |        | Ø3 |        | Ø4 |
| 105.4 s |    |        | 14.6 s |    | 14.6 s |    |
|         | Ø5 |        | Ø6     |    |        |    |
| 10 s    |    | 95.4 s |        |    |        |    |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

08/11/2020

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |   |                                                                                     |
| Traffic Volume (veh/h)       | 6                                                                                 | 1882                                                                                                                                                                                                                                                  | 8                                                                                 | 0                                                                                 | 3448                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Future Volume (veh/h)        | 6                                                                                 | 1882                                                                                                                                                                                                                                                  | 8                                                                                 | 0                                                                                 | 3448                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 7                                                                                 | 2046                                                                                                                                                                                                                                                  | 9                                                                                 | 0                                                                                 | 3748                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 16                                                                                | 5079                                                                                                                                                                                                                                                  | 22                                                                                | 0                                                                                 | 4652                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2                                                                                                                                                                       | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.00                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5330                                                                                                                                                                                                                                                  | 23                                                                                | 0                                                                                 | 5529                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                                                                                                                  | 0                                                                                   |
| Grp Volume(v), veh/h         | 7                                                                                 | 1327                                                                                                                                                                                                                                                  | 728                                                                               | 0                                                                                 | 3748                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1896                                                                              | 0                                                                                 | 1729                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Q Serve(g_s), s              | 0.4                                                                               | 2.9                                                                                                                                                                                                                                                   | 2.9                                                                               | 0.0                                                                               | 26.2                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.4                                                                               | 2.9                                                                                                                                                                                                                                                   | 2.9                                                                               | 0.0                                                                               | 26.2                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.01                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                                                                                                         | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 16                                                                                | 3295                                                                                                                                                                                                                                                  | 1806                                                                              | 0                                                                                 | 4652                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 2                                                                                                                                                                       | 0                                                                                   |
| V/C Ratio(X)                 | 0.44                                                                              | 0.40                                                                                                                                                                                                                                                  | 0.40                                                                              | 0.00                                                                              | 0.81                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 100                                                                               | 3570                                                                                                                                                                                                                                                  | 1957                                                                              | 0                                                                                 | 4823                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 195                                                                                                                                                                     | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 48.1                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.2                                                                               | 0.0                                                                               | 1.9                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 6.8                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 0.4                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 55.0                                                                              | 0.3                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.0                                                                               | 2.9                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                                                                                                       | A                                                                                   |
| Approach Vol, veh/h          | 2062                                                                              |                                                                                                                                                                                                                                                       | 3748                                                                              |                                                                                   |                                                                                                                                                                                                                                                       | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        | 0.5                                                                               |                                                                                                                                                                                                                                                       | 2.9                                                                               |                                                                                   |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 4                                                                                 |                                                                                   | 5                                                                                                                                                                                                                                                     |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 97.6                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   | 5.5                                                                                                                                                                                                                                                   |                                                                                   | 92.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       | 4.6                                                                               |                                                                                   | 4.6                                                                                                                                                                                                                                                   |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                                                                                                                                                                                       | 10.0                                                                              |                                                                                   | 5.4                                                                                                                                                                                                                                                   |                                                                                   | 90.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 4.9                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   | 2.4                                                                                                                                                                                                                                                   |                                                                                   | 28.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 24.5                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   | 0.0                                                                                                                                                                                                                                                   |                                                                                   | 59.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 2.0                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑↑  | ↔    | ↑↑↑↑  |       | ↔     | ↔     | ↔     |
| Traffic Volume (vph) | 1882  | 14   | 3449  | 4     | 0     | 11    | 0     |
| Future Volume (vph)  | 1882  | 14   | 3449  | 4     | 0     | 11    | 0     |
| Turn Type            | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag   | Lead |       |       |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes  |       |       |       |       |       |
| Recall Mode          | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

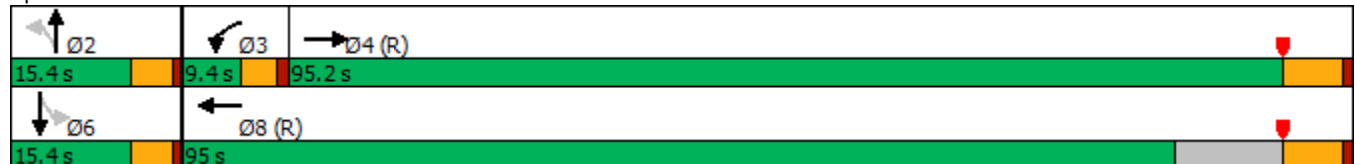
Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |                                                                                   |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)                                                                             | 0                                                                                 | 1882                                                                              | 8                                                                                 | 14                                                                                | 3449                                                                              | 39                                                                                | 4                                                                                  | 0                                                                                   | 17                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)                                                                              | 0                                                                                 | 1882                                                                              | 8                                                                                 | 14                                                                                | 3449                                                                              | 39                                                                                | 4                                                                                  | 0                                                                                   | 17                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                              |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 0                                                                                 | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                               | 0                                                                                 | 2046                                                                              | 9                                                                                 | 15                                                                                | 3749                                                                              | 42                                                                                | 4                                                                                  | 0                                                                                   | 18                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor                                                                                   | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                         | 0                                                                                 | 5405                                                                              | 24                                                                                | 30                                                                                | 4496                                                                              | 50                                                                                | 44                                                                                 | 9                                                                                   | 76                                                                                  | 146                                                                                 | 0                                                                                   | 92                                                                                  |
| Arrive On Green                                                                                    | 0.00                                                                              | 0.80                                                                              | 0.80                                                                              | 0.02                                                                              | 0.85                                                                              | 0.85                                                                              | 0.06                                                                               | 0.00                                                                                | 0.06                                                                                | 0.06                                                                                | 0.00                                                                                | 0.06                                                                                |
| Sat Flow, veh/h                                                                                    | 0                                                                                 | 7033                                                                              | 30                                                                                | 1810                                                                              | 5288                                                                              | 59                                                                                | 145                                                                                | 149                                                                                 | 1322                                                                                | 1417                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h                                                                               | 0                                                                                 | 1482                                                                              | 573                                                                               | 15                                                                                | 2447                                                                              | 1344                                                                              | 22                                                                                 | 0                                                                                   | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln                                                                           | 0                                                                                 | 1634                                                                              | 1895                                                                              | 1810                                                                              | 1729                                                                              | 1889                                                                              | 1616                                                                               | 0                                                                                   | 0                                                                                   | 1417                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s                                                                                    | 0.0                                                                               | 10.5                                                                              | 10.5                                                                              | 1.0                                                                               | 43.5                                                                              | 44.4                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s                                                                              | 0.0                                                                               | 10.5                                                                              | 10.5                                                                              | 1.0                                                                               | 43.5                                                                              | 44.4                                                                              | 1.5                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                                                                                       | 0.00                                                                              |                                                                                   | 0.02                                                                              | 1.00                                                                              |                                                                                   | 0.03                                                                              | 0.18                                                                               |                                                                                     | 0.82                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                             | 0                                                                                 | 3915                                                                              | 1513                                                                              | 30                                                                                | 2940                                                                              | 1606                                                                              | 128                                                                                | 0                                                                                   | 0                                                                                   | 146                                                                                 | 0                                                                                   | 92                                                                                  |
| V/C Ratio(X)                                                                                       | 0.00                                                                              | 0.38                                                                              | 0.38                                                                              | 0.51                                                                              | 0.83                                                                              | 0.84                                                                              | 0.17                                                                               | 0.00                                                                                | 0.00                                                                                | 0.08                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h                                                                              | 0                                                                                 | 3915                                                                              | 1513                                                                              | 78                                                                                | 2940                                                                              | 1606                                                                              | 180                                                                                | 0                                                                                   | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                 | 0.00                                                                              | 0.87                                                                              | 0.87                                                                              | 0.09                                                                              | 0.09                                                                              | 0.09                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                           | 0.0                                                                               | 3.5                                                                               | 3.5                                                                               | 58.5                                                                              | 4.6                                                                               | 4.7                                                                               | 54.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 53.7                                                                                | 0.0                                                                                 | 53.3                                                                                |
| Incr Delay (d2), s/veh                                                                             | 0.0                                                                               | 0.2                                                                               | 0.6                                                                               | 0.4                                                                               | 0.3                                                                               | 0.5                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                           | 0.0                                                                               | 2.0                                                                               | 2.5                                                                               | 0.4                                                                               | 4.3                                                                               | 4.8                                                                               | 0.7                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 0.0                                                                               | 3.7                                                                               | 4.1                                                                               | 59.0                                                                              | 4.9                                                                               | 5.2                                                                               | 54.7                                                                               | 0.0                                                                                 | 0.0                                                                                 | 53.9                                                                                | 0.0                                                                                 | 53.4                                                                                |
| LnGrp LOS                                                                                          | A                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h                                                                                |                                                                                   | 2055                                                                              |                                                                                   |                                                                                   | 3806                                                                              |                                                                                   |                                                                                    | 22                                                                                  |                                                                                     |                                                                                     | 13                                                                                  |                                                                                     |
| Approach Delay, s/veh                                                                              |                                                                                   | 3.8                                                                               |                                                                                   |                                                                                   | 5.2                                                                               |                                                                                   |                                                                                    | 54.7                                                                                |                                                                                     |                                                                                     | 53.9                                                                                |                                                                                     |
| Approach LOS                                                                                       |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                               |                                                                                   | 2                                                                                 | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           |                                                                                   | 11.5                                                                              | 6.2                                                                               | 102.3                                                                             |                                                                                   | 11.5                                                                              |                                                                                    | 108.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            |                                                                                   | 4.6                                                                               | * 4.2                                                                             | 6.5                                                                               |                                                                                   | 4.6                                                                               |                                                                                    | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        |                                                                                   | 10.8                                                                              | * 5.2                                                                             | 88.7                                                                              |                                                                                   | 10.8                                                                              |                                                                                    | 88.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       |                                                                                   | 3.5                                                                               | 3.0                                                                               | 12.5                                                                              |                                                                                   | 2.8                                                                               |                                                                                    | 46.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            |                                                                                   | 0.0                                                                               | 0.0                                                                               | 22.6                                                                              |                                                                                   | 0.0                                                                               |                                                                                    | 40.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 |                                                                                   |                                                                                   | 5.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020



| Lane Group           | EBL  | EBT   | WBT   | NBR   | Ø4   |
|----------------------|------|-------|-------|-------|------|
| Lane Configurations  |      |       |       |       |      |
| Traffic Volume (vph) | 4    | 3365  | 2879  | 8     |      |
| Future Volume (vph)  | 4    | 3365  | 2879  | 8     |      |
| Turn Type            | Prot | NA    | NA    | Prot  |      |
| Protected Phases     | 5    | 2     | 6     | 3     | 4    |
| Permitted Phases     |      |       |       |       |      |
| Detector Phase       | 5    | 2     | 6     | 3     |      |
| Switch Phase         |      |       |       |       |      |
| Minimum Initial (s)  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0 |
| Minimum Split (s)    | 9.6  | 26.6  | 26.6  | 14.1  | 14.6 |
| Total Split (s)      | 12.0 | 105.4 | 93.4  | 14.6  | 14.6 |
| Total Split (%)      | 8.9% | 78.3% | 69.4% | 10.8% | 11%  |
| Yellow Time (s)      | 3.6  | 3.6   | 3.6   | 3.6   | 3.6  |
| All-Red Time (s)     | 1.0  | 1.0   | 1.0   | 0.5   | 1.0  |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 4.6  | 4.6   | 4.6   | 4.1   |      |
| Lead/Lag             | Lead |       | Lag   | Lead  | Lag  |
| Lead-Lag Optimize?   | Yes  |       | Yes   | Yes   | Yes  |
| Recall Mode          | None | None  | None  | None  | Min  |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 122.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|         |        |        |        |
|---------|--------|--------|--------|
| Ø2      |        | Ø3     | Ø4     |
| 105.4 s |        | 14.6 s | 14.6 s |
| Ø5      | Ø6     |        |        |
| 12 s    | 93.4 s |        |        |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |                                                                                   |    |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |   |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 3365                                                                                                                                                                                                                                                  | 5                                                                                 | 0                                                                                 | 2879                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 3365                                                                                                                                                                                                                                                  | 5                                                                                 | 0                                                                                 | 2879                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 3658                                                                                                                                                                                                                                                  | 5                                                                                 | 0                                                                                 | 3129                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 10                                                                                | 5410                                                                                                                                                                                                                                                  | 7                                                                                 | 0                                                                                 | 5107                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2                                                                                                                                                                       | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.00                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5691                                                                                                                                                                                                                                                  | 8                                                                                 | 0                                                                                 | 5700                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                                                                                                                  | 0                                                                                   |
| Grp Volume(v), veh/h         | 4                                                                                 | 2442                                                                                                                                                                                                                                                  | 1221                                                                              | 0                                                                                 | 3129                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                                                                                                                                                                                                  | 1899                                                                              | 0                                                                                 | 1900                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 8.3                                                                                                                                                                                                                                                   | 8.3                                                                               | 0.0                                                                               | 11.8                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 8.3                                                                                                                                                                                                                                                   | 8.3                                                                               | 0.0                                                                               | 11.8                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              | 0.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                                                                                                         | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 10                                                                                | 3612                                                                                                                                                                                                                                                  | 1805                                                                              | 0                                                                                 | 5107                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 2                                                                                                                                                                       | 0                                                                                   |
| V/C Ratio(X)                 | 0.42                                                                              | 0.68                                                                                                                                                                                                                                                  | 0.68                                                                              | 0.00                                                                              | 0.61                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 144                                                                               | 4109                                                                                                                                                                                                                                                  | 2053                                                                              | 0                                                                                 | 5430                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 204                                                                                                                                                                     | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 0.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 46.2                                                                              | 0.3                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.0                                                                               | 1.1                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 10.5                                                                              | 0.4                                                                                                                                                                                                                                                   | 0.8                                                                               | 0.0                                                                               | 0.2                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.2                                                                                                                                                                                                                                                   | 0.4                                                                               | 0.0                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 56.7                                                                              | 0.7                                                                                                                                                                                                                                                   | 1.1                                                                               | 0.0                                                                               | 1.3                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                                                                                                       | A                                                                                   |
| Approach Vol, veh/h          | 3667                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 3129                                                                                                                                                                                                                                                  |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0                                                                                                                                                                       |                                                                                     |
| Approach Delay, s/veh        | 0.9                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 1.3                                                                                                                                                                                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | A                                                                                                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 4                                                                                 |                                                                                   | 5                                                                                                                                                                                                                                                     |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 93.2                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   | 5.1                                                                                                                                                                                                                                                   |                                                                                   | 88.1                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       | 4.6                                                                               |                                                                                   | 4.6                                                                                                                                                                                                                                                   |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                                                                                                                                                                                       | 10.0                                                                              |                                                                                   | 7.4                                                                                                                                                                                                                                                   |                                                                                   | 88.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 10.3                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   | 2.2                                                                                                                                                                                                                                                   |                                                                                   | 13.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 78.3                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   | 0.0                                                                                                                                                                                                                                                   |                                                                                   | 59.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 1.1                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↑↑↑↑  | ↔    | ↑↑↑↑  |       | ↔     | ↔     | ↔     |
| Traffic Volume (vph) | 3365  | 27   | 2878  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 3365  | 27   | 2878  | 2     | 0     | 37    | 0     |
| Turn Type            | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lag   | Lead |       |       |       |       |       |
| Lead-Lag Optimize?   | Yes   | Yes  |       |       |       |       |       |
| Recall Mode          | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

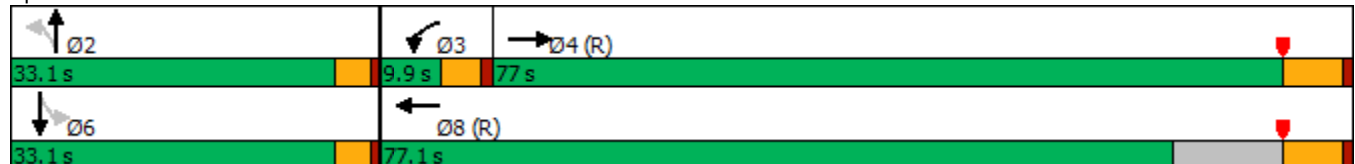
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                |                                                                                   |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)                                                                             | 0                                                                                 | 3365                                                                              | 14                                                                                | 27                                                                                | 2878                                                                              | 18                                                                                | 2                                                                                  | 0                                                                                   | 11                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)                                                                              | 0                                                                                 | 3365                                                                              | 14                                                                                | 27                                                                                | 2878                                                                              | 18                                                                                | 2                                                                                  | 0                                                                                   | 11                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh                                                                                | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                              |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                             | 0                                                                                 | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h                                                                               | 0                                                                                 | 3658                                                                              | 15                                                                                | 29                                                                                | 3128                                                                              | 20                                                                                | 2                                                                                  | 0                                                                                   | 12                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor                                                                                   | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                         | 0                                                                                 | 5167                                                                              | 21                                                                                | 47                                                                                | 4401                                                                              | 28                                                                                | 41                                                                                 | 13                                                                                  | 116                                                                                 | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green                                                                                    | 0.00                                                                              | 0.76                                                                              | 0.76                                                                              | 0.03                                                                              | 0.83                                                                              | 0.83                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h                                                                                    | 0                                                                                 | 7035                                                                              | 28                                                                                | 1810                                                                              | 5318                                                                              | 34                                                                                | 80                                                                                 | 152                                                                                 | 1391                                                                                | 1424                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h                                                                               | 0                                                                                 | 2647                                                                              | 1026                                                                              | 29                                                                                | 2032                                                                              | 1116                                                                              | 14                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln                                                                           | 0                                                                                 | 1634                                                                              | 1895                                                                              | 1810                                                                              | 1729                                                                              | 1894                                                                              | 1623                                                                               | 0                                                                                   | 0                                                                                   | 1424                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s                                                                                    | 0.0                                                                               | 33.3                                                                              | 33.5                                                                              | 1.9                                                                               | 29.5                                                                              | 29.7                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s                                                                              | 0.0                                                                               | 33.3                                                                              | 33.5                                                                              | 1.9                                                                               | 29.5                                                                              | 29.7                                                                              | 0.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.9                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                                                                                       | 0.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.14                                                                               |                                                                                     | 0.86                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                             | 0                                                                                 | 3742                                                                              | 1447                                                                              | 47                                                                                | 2861                                                                              | 1567                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                                                                                       | 0.00                                                                              | 0.71                                                                              | 0.71                                                                              | 0.62                                                                              | 0.71                                                                              | 0.71                                                                              | 0.08                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h                                                                              | 0                                                                                 | 3742                                                                              | 1447                                                                              | 80                                                                                | 2861                                                                              | 1567                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                 | 0.00                                                                              | 0.53                                                                              | 0.53                                                                              | 0.32                                                                              | 0.32                                                                              | 0.32                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                           | 0.0                                                                               | 7.3                                                                               | 7.3                                                                               | 57.9                                                                              | 4.3                                                                               | 4.3                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh                                                                             | 0.0                                                                               | 0.6                                                                               | 1.6                                                                               | 1.6                                                                               | 0.5                                                                               | 0.9                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                           | 0.0                                                                               | 7.6                                                                               | 9.3                                                                               | 0.9                                                                               | 4.5                                                                               | 5.1                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                               | 0.0                                                                               | 7.9                                                                               | 8.9                                                                               | 59.5                                                                              | 4.8                                                                               | 5.3                                                                               | 51.1                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                                                                                          | A                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h                                                                                |                                                                                   | 3673                                                                              |                                                                                   |                                                                                   | 3177                                                                              |                                                                                   |                                                                                    | 14                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh                                                                              |                                                                                   | 8.2                                                                               |                                                                                   |                                                                                   | 5.5                                                                               |                                                                                   |                                                                                    | 51.1                                                                                |                                                                                     |                                                                                     | 52.1                                                                                |                                                                                     |
| Approach LOS                                                                                       |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                    | D                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                               |                                                                                   | 2                                                                                 | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                           |                                                                                   | 14.2                                                                              | 7.7                                                                               | 98.1                                                                              |                                                                                   | 14.2                                                                              |                                                                                    | 105.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                            |                                                                                   | * 4.2                                                                             | 4.6                                                                               | 6.5                                                                               |                                                                                   | * 4.2                                                                             |                                                                                    | 6.5                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                        |                                                                                   | * 29                                                                              | 5.3                                                                               | 70.5                                                                              |                                                                                   | * 29                                                                              |                                                                                    | 70.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                       |                                                                                   | 2.9                                                                               | 3.9                                                                               | 35.5                                                                              |                                                                                   | 4.9                                                                               |                                                                                    | 31.7                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                            |                                                                                   | 0.0                                                                               | 0.0                                                                               | 32.2                                                                              |                                                                                   | 0.1                                                                               |                                                                                    | 33.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                 |                                                                                   |                                                                                   | 7.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                        |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Queuing and Blocking Report

Horizon Year (2040) With Project (Alt. 2) - AM Peak Hour WITH IMPROVEMENTS

08/11/2020

### Intersection: 3: Private Driveway & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB  | WB  | NB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | L   | T   | T   | TR  | T   | T   | TR  | R   |
| Maximum Queue (ft)    | 52  | 182 | 182 | 204 | 276 | 329 | 334 | 65  |
| Average Queue (ft)    | 12  | 51  | 54  | 54  | 110 | 119 | 131 | 12  |
| 95th Queue (ft)       | 42  | 144 | 150 | 148 | 229 | 236 | 243 | 41  |
| Link Distance (ft)    |     | 592 | 592 | 592 | 528 | 528 | 528 | 332 |
| Upstream Blk Time (%) |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) | 150 |     |     |     |     |     |     |     |
| Storage Blk Time (%)  |     | 1   |     |     |     |     |     |     |
| Queuing Penalty (veh) |     | 0   |     |     |     |     |     |     |

### Intersection: 4: Vista Grande Dr. & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB   | WB   | WB   | NB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|------|------|------|-----|-----|
| Directions Served     | T   | T   | T   | TR  | L   | T    | T    | TR   | LTR | L   |
| Maximum Queue (ft)    | 75  | 74  | 52  | 31  | 49  | 3975 | 4074 | 115  | 72  | 51  |
| Average Queue (ft)    | 20  | 20  | 11  | 8   | 10  | 142  | 666  | 32   | 20  | 9   |
| 95th Queue (ft)       | 56  | 59  | 35  | 28  | 36  | 1317 | 3057 | 91   | 52  | 34  |
| Link Distance (ft)    | 528 | 528 | 528 | 528 |     | 4017 | 4017 | 4017 | 834 |     |
| Upstream Blk Time (%) |     |     |     |     |     |      |      | 0    |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |      |      | 2    |     |     |
| Storage Bay Dist (ft) |     |     |     |     | 155 |      |      |      |     | 150 |
| Storage Blk Time (%)  |     |     |     |     |     |      |      |      |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |      |      |      |     |     |

### Zone Summary

Zone wide Queuing Penalty: 2

## Queuing and Blocking Report

Horizon Year (2040) With Project (Alt. 2) - PM Peak Hour WITH IMPROVEMENTS

08/11/2020

### Intersection: 3: Private Driveway & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB  | WB  | NB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | L   | T   | T   | TR  | T   | T   | TR  | R   |
| Maximum Queue (ft)    | 31  | 572 | 556 | 530 | 552 | 554 | 584 | 28  |
| Average Queue (ft)    | 8   | 77  | 108 | 97  | 97  | 105 | 110 | 5   |
| 95th Queue (ft)       | 27  | 262 | 340 | 285 | 371 | 381 | 387 | 21  |
| Link Distance (ft)    |     | 598 | 598 | 598 | 542 | 542 | 542 | 265 |
| Upstream Blk Time (%) |     |     |     |     | 2   | 3   | 3   |     |
| Queuing Penalty (veh) |     |     |     |     | 23  | 26  | 28  |     |
| Storage Bay Dist (ft) | 150 |     |     |     |     |     |     |     |
| Storage Blk Time (%)  |     | 1   |     |     |     |     |     |     |
| Queuing Penalty (veh) |     | 0   |     |     |     |     |     |     |

### Intersection: 4: Vista Grande Dr. & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB   | WB   | WB   | NB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----|
| Directions Served     | T   | T   | T   | TR  | L   | T    | T    | TR   | LTR | L   | TR  |
| Maximum Queue (ft)    | 223 | 205 | 210 | 186 | 94  | 470  | 441  | 444  | 30  | 73  | 52  |
| Average Queue (ft)    | 96  | 110 | 96  | 96  | 34  | 60   | 63   | 67   | 5   | 34  | 3   |
| 95th Queue (ft)       | 180 | 189 | 167 | 168 | 71  | 229  | 219  | 223  | 23  | 71  | 20  |
| Link Distance (ft)    | 542 | 542 | 542 | 542 |     | 3997 | 3997 | 3997 | 827 |     | 778 |
| Upstream Blk Time (%) |     |     |     |     |     |      |      |      |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |      |      |      |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     | 155 |      |      |      |     | 150 |     |
| Storage Blk Time (%)  |     |     |     |     |     | 2    |      |      |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     | 1    |      |      |     |     |     |

### Zone Summary

Zone wide Queuing Penalty: 78

**APPENDIX 8.3:**

**SUPPLEMENTAL ANALYSIS (ALTERNATIVE 3) WORKSHEETS**

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Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020

|                      |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBR                                                                               | Ø4   |
| Lane Configurations  |  |  |  |  |  |      |
| Traffic Volume (vph) | 5                                                                                 | 1226                                                                              | 2                                                                                 | 2509                                                                              | 6                                                                                 |      |
| Future Volume (vph)  | 5                                                                                 | 1226                                                                              | 2                                                                                 | 2509                                                                              | 6                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Prot                                                                              |      |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 6                                                                                 | 3                                                                                 | 4    |
| Permitted Phases     |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                   |      |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.6                                                                               | 26.6                                                                              | 26.6                                                                              | 26.6                                                                              | 14.1                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 105.4                                                                             | 95.4                                                                              | 95.4                                                                              | 14.6                                                                              | 14.6 |
| Total Split (%)      | 7.4%                                                                              | 78.3%                                                                             | 70.9%                                                                             | 70.9%                                                                             | 10.8%                                                                             | 11%  |
| Yellow Time (s)      | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.1                                                                               |      |
| Lead/Lag             | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag  |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes  |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Min  |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 89.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|                                                                                        |                                                                                        |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø2 |                                                                                        |  Ø3 |  Ø4 |
| 105.4 s                                                                                |                                                                                        | 14.6 s                                                                                   | 14.6 s                                                                                   |
|  Ø5 |  Ø6 |                                                                                          |                                                                                          |
| 10 s                                                                                   | 95.4 s                                                                                 |                                                                                          |                                                                                          |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

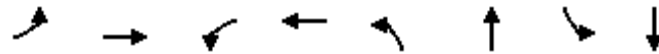
|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                     |                                                                                     |  |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 5                                                                                 | 1226                                                                              | 5                                                                                 | 2                                                                                 | 2509                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1226                                                                              | 5                                                                                 | 2                                                                                 | 2509                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                   | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1333                                                                              | 5                                                                                 | 2                                                                                 | 2727                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 4989                                                                              | 19                                                                                | 460                                                                               | 4480                                                                              | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.94                                                                              | 0.94                                                                              | 0.86                                                                              | 0.86                                                                              | 0.00                                                                              | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5334                                                                              | 20                                                                                | 415                                                                               | 5358                                                                              | 0                                                                                 |                                                                                     | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                              | 0                                                                                   |
| Grp Volume(v), veh/h         | 5                                                                                 | 864                                                                               | 474                                                                               | 2                                                                                 | 2727                                                                              | 0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1896                                                                              | 415                                                                               | 1729                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 1.5                                                                               | 1.5                                                                               | 0.0                                                                               | 10.7                                                                              | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 1.5                                                                               | 1.5                                                                               | 0.0                                                                               | 10.7                                                                              | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 3234                                                                              | 1773                                                                              | 460                                                                               | 4480                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.42                                                                              | 0.27                                                                              | 0.27                                                                              | 0.00                                                                              | 0.61                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 138                                                                               | 4911                                                                              | 2693                                                                              | 633                                                                               | 6636                                                                              | 0                                                                                 |                                                                                     |                                                                                     |                                                                                     | 0                                                                                   | 268                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                     |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 35.1                                                                              | 0.2                                                                               | 0.2                                                                               | 0.7                                                                               | 1.4                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 8.4                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 43.5                                                                              | 0.2                                                                               | 0.3                                                                               | 0.7                                                                               | 1.5                                                                               | 0.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                     |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1343                                                                              |                                                                                   | 2729                                                                              |                                                                                   |                                                                                   |                                                                                   | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.4                                                                               |                                                                                   | 1.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 5                                                                                 | 6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 71.0                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 5.1                                                                               | 65.9                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.6                                                                               |                                                                                   | 4.6                                                                               | 4.6                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                   | 10.0                                                                              |                                                                                   | 5.4                                                                               | 90.8                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.5                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 2.2                                                                               | 12.7                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 10.3                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               | 48.6                                                                              |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 4    | 1221  | 12   | 2508  | 3     | 0     | 11    | 0     |
| Future Volume (vph)  | 4    | 1221  | 12   | 2508  | 3     | 0     | 11    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 9.1  | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 7.6% | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag  | Lag   | Lead | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

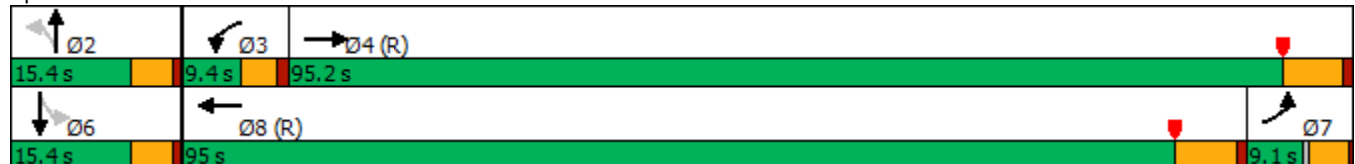
Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 1221                                                                              | 7                                                                                 | 12                                                                                | 2508                                                                              | 35                                                                                | 3                                                                                  | 0                                                                                   | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1221                                                                              | 7                                                                                 | 12                                                                                | 2508                                                                              | 35                                                                                | 3                                                                                  | 0                                                                                   | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 1327                                                                              | 8                                                                                 | 13                                                                                | 2726                                                                              | 38                                                                                | 3                                                                                  | 0                                                                                   | 15                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 112                                                                               | 4278                                                                              | 26                                                                                | 27                                                                                | 3888                                                                              | 54                                                                                | 42                                                                                 | 7                                                                                   | 72                                                                                  | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| Arrive On Green              | 0.06                                                                              | 0.80                                                                              | 0.80                                                                              | 0.01                                                                              | 0.74                                                                              | 0.74                                                                              | 0.05                                                                               | 0.00                                                                                | 0.05                                                                                | 0.05                                                                                | 0.00                                                                                | 0.05                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5320                                                                              | 32                                                                                | 1810                                                                              | 5272                                                                              | 73                                                                                | 130                                                                                | 139                                                                                 | 1347                                                                                | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 863                                                                               | 472                                                                               | 13                                                                                | 1785                                                                              | 979                                                                               | 18                                                                                 | 0                                                                                   | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1894                                                                              | 1810                                                                              | 1729                                                                              | 1887                                                                              | 1616                                                                               | 0                                                                                   | 0                                                                                   | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.2                                                                               | 7.8                                                                               | 7.8                                                                               | 0.9                                                                               | 33.6                                                                              | 34.0                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 7.8                                                                               | 7.8                                                                               | 0.9                                                                               | 33.6                                                                              | 34.0                                                                              | 1.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.02                                                                              | 1.00                                                                              |                                                                                   | 0.04                                                                              | 0.17                                                                               |                                                                                     | 0.83                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 112                                                                               | 2781                                                                              | 1523                                                                              | 27                                                                                | 2550                                                                              | 1392                                                                              | 122                                                                                | 0                                                                                   | 0                                                                                   | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| V/C Ratio(X)                 | 0.04                                                                              | 0.31                                                                              | 0.31                                                                              | 0.49                                                                              | 0.70                                                                              | 0.70                                                                              | 0.15                                                                               | 0.00                                                                                | 0.00                                                                                | 0.09                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 112                                                                               | 2781                                                                              | 1523                                                                              | 78                                                                                | 2550                                                                              | 1392                                                                              | 179                                                                                | 0                                                                                   | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.95                                                                              | 0.95                                                                              | 0.95                                                                              | 0.48                                                                              | 0.48                                                                              | 0.48                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 52.9                                                                              | 3.1                                                                               | 3.1                                                                               | 58.7                                                                              | 8.5                                                                               | 8.6                                                                               | 54.3                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.1                                                                                | 0.0                                                                                 | 53.8                                                                                |
| Incr Delay (d2), s/veh       | 0.1                                                                               | 0.3                                                                               | 0.5                                                                               | 2.5                                                                               | 0.8                                                                               | 1.5                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 1.6                                                                               | 1.8                                                                               | 0.4                                                                               | 9.0                                                                               | 10.2                                                                              | 0.5                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 53.0                                                                              | 3.3                                                                               | 3.6                                                                               | 61.2                                                                              | 9.3                                                                               | 10.1                                                                              | 54.9                                                                               | 0.0                                                                                 | 0.0                                                                                 | 54.3                                                                                | 0.0                                                                                 | 53.8                                                                                |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | B                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 1339                                                                              |                                                                                   |                                                                                   | 2777                                                                              |                                                                                   |                                                                                   | 18                                                                                 |                                                                                     |                                                                                     | 13                                                                                  |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 3.6                                                                               |                                                                                   |                                                                                   | 9.8                                                                               |                                                                                   |                                                                                   | 54.9                                                                               |                                                                                     |                                                                                     | 54.3                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | D                                                                                  |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 | 4                                                                                 |                                                                                   | 6                                                                                 | 7                                                                                  | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              |                                                                                   | 6.0                                                                               | 103.0                                                                             |                                                                                   | 11.0                                                                              | 14.0                                                                               | 95.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | * 4.2                                                                             | 6.5                                                                               |                                                                                   | 4.6                                                                               | 6.5                                                                                | * 6.5                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.8                                                                              |                                                                                   | * 5.2                                                                             | 88.7                                                                              |                                                                                   | 10.8                                                                              | 5.0                                                                                | * 89                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.3                                                                               |                                                                                   | 2.9                                                                               | 9.8                                                                               |                                                                                   | 2.8                                                                               | 2.2                                                                                | 36.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               | 10.3                                                                              |                                                                                   | 0.0                                                                               | 0.0                                                                                | 35.9                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 8.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020

|                      |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBR                                                                               | Ø4   |
| Lane Configurations  |  |  |  |  |  |      |
| Traffic Volume (vph) | 3                                                                                 | 2314                                                                              | 3                                                                                 | 1944                                                                              | 7                                                                                 |      |
| Future Volume (vph)  | 3                                                                                 | 2314                                                                              | 3                                                                                 | 1944                                                                              | 7                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Prot                                                                              |      |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 6                                                                                 | 3                                                                                 | 4    |
| Permitted Phases     |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                   |      |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.6                                                                               | 26.6                                                                              | 26.6                                                                              | 26.6                                                                              | 14.1                                                                              | 14.6 |
| Total Split (s)      | 12.0                                                                              | 105.4                                                                             | 93.4                                                                              | 93.4                                                                              | 14.6                                                                              | 14.6 |
| Total Split (%)      | 8.9%                                                                              | 78.3%                                                                             | 69.4%                                                                             | 69.4%                                                                             | 10.8%                                                                             | 11%  |
| Yellow Time (s)      | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.1                                                                               |      |
| Lead/Lag             | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag  |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes  |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Min  |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 78.7

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|                                                                                        |                                                                                        |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø2 |                                                                                        |  Ø3 |  Ø4 |
| 105.4 s                                                                                |                                                                                        | 14.6 s                                                                                   | 14.6 s                                                                                   |
|  Ø5 |  Ø6 |                                                                                          |                                                                                          |
| 12 s                                                                                   | 93.4 s                                                                                 |                                                                                          |                                                                                          |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

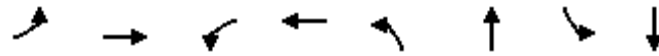
|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 3                                                                                 | 2314                                                                              | 1                                                                                 | 3                                                                                 | 1944                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2314                                                                              | 1                                                                                 | 3                                                                                 | 1944                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2515                                                                              | 1                                                                                 | 3                                                                                 | 2113                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 7                                                                                 | 4871                                                                              | 2                                                                                 | 249                                                                               | 4227                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 4                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.00                                                                              | 0.91                                                                              | 0.91                                                                              | 0.81                                                                              | 0.81                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5355                                                                              | 2                                                                                 | 131                                                                               | 5358                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                              | 0                                                                                   |
| Grp Volume(v), veh/h         | 3                                                                                 | 1624                                                                              | 892                                                                               | 3                                                                                 | 2113                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1900                                                                              | 131                                                                               | 1729                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.1                                                                               | 4.1                                                                               | 4.1                                                                               | 0.2                                                                               | 6.5                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 4.1                                                                               | 4.1                                                                               | 0.2                                                                               | 6.5                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 7                                                                                 | 3145                                                                              | 1728                                                                              | 249                                                                               | 4227                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 4                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.41                                                                              | 0.52                                                                              | 0.52                                                                              | 0.01                                                                              | 0.50                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 263                                                                               | 6855                                                                              | 3766                                                                              | 371                                                                               | 9059                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 374                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 25.3                                                                              | 0.4                                                                               | 0.4                                                                               | 0.9                                                                               | 1.5                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 12.8                                                                              | 0.1                                                                               | 0.2                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.1                                                                               | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 38.0                                                                              | 0.5                                                                               | 0.6                                                                               | 0.9                                                                               | 1.6                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 2519                                                                              |                                                                                   | 2116                                                                              |                                                                                   |                                                                                   |                                                                                   | 0                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.6                                                                               |                                                                                   | 1.6                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 5                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 50.8                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 4.8                                                                               |                                                                                   | 46.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.6                                                                               |                                                                                   | 4.6                                                                               |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                   | 10.0                                                                              |                                                                                   | 7.4                                                                               |                                                                                   | 88.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 6.1                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 2.1                                                                               |                                                                                   | 8.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 40.2                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 28.9                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↰    | ↑↑↑   | ↰    | ↑↑↑   |       | ↕     | ↰     | ↰     |
| Traffic Volume (vph) | 2    | 2309  | 23   | 1935  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2    | 2309  | 23   | 1935  | 2     | 0     | 37    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 9.1  | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 7.6% | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lead | Lag   | Lead | Lag   |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

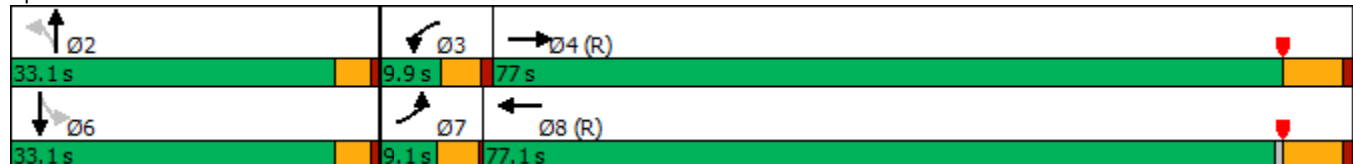
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 2                                                                                 | 2309                                                                              | 12                                                                                | 23                                                                                | 1935                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 9                                                                                   | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)        | 2                                                                                 | 2309                                                                              | 12                                                                                | 23                                                                                | 1935                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 9                                                                                   | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 2                                                                                 | 2510                                                                              | 13                                                                                | 25                                                                                | 2103                                                                              | 17                                                                                | 2                                                                                  | 0                                                                                   | 10                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 5                                                                                 | 4077                                                                              | 21                                                                                | 43                                                                                | 4196                                                                              | 34                                                                                | 44                                                                                 | 14                                                                                  | 113                                                                                 | 181                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.77                                                                              | 0.77                                                                              | 0.02                                                                              | 0.79                                                                              | 0.79                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5325                                                                              | 28                                                                                | 1810                                                                              | 5307                                                                              | 43                                                                                | 106                                                                                | 165                                                                                 | 1352                                                                                | 1427                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 2                                                                                 | 1629                                                                              | 894                                                                               | 25                                                                                | 1370                                                                              | 750                                                                               | 12                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1895                                                                              | 1810                                                                              | 1729                                                                              | 1892                                                                              | 1622                                                                               | 0                                                                                   | 0                                                                                   | 1427                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 25.1                                                                              | 25.1                                                                              | 1.6                                                                               | 16.5                                                                              | 16.5                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.1                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 25.1                                                                              | 25.1                                                                              | 1.6                                                                               | 16.5                                                                              | 16.5                                                                              | 0.8                                                                                | 0.0                                                                                 | 0.0                                                                                 | 3.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.17                                                                               |                                                                                     | 0.83                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 5                                                                                 | 2647                                                                              | 1451                                                                              | 43                                                                                | 2734                                                                              | 1496                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 181                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                 | 0.41                                                                              | 0.62                                                                              | 0.62                                                                              | 0.59                                                                              | 0.50                                                                              | 0.50                                                                              | 0.07                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2647                                                                              | 1451                                                                              | 80                                                                                | 2734                                                                              | 1496                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 0.68                                                                              | 0.68                                                                              | 0.68                                                                              | 0.73                                                                              | 0.73                                                                              | 0.73                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.7                                                                              | 6.2                                                                               | 6.2                                                                               | 58.0                                                                              | 4.4                                                                               | 4.4                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh       | 33.7                                                                              | 0.7                                                                               | 1.3                                                                               | 3.4                                                                               | 0.5                                                                               | 0.9                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 6.1                                                                               | 7.0                                                                               | 0.8                                                                               | 3.6                                                                               | 4.1                                                                               | 0.3                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 93.5                                                                              | 7.0                                                                               | 7.6                                                                               | 61.5                                                                              | 4.8                                                                               | 5.2                                                                               | 51.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                    | F                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2525                                                                              |                                                                                   |                                                                                   |                                                                                   | 2145                                                                              |                                                                                   | 12                                                                                 |                                                                                     |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 7.3                                                                               |                                                                                   |                                                                                   |                                                                                   | 5.6                                                                               |                                                                                   | 51.0                                                                               |                                                                                     |                                                                                     |                                                                                     | 52.1                                                                                |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   | D                                                                                  |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                  |                                                                                     | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.2                                                                              |                                                                                   | 7.4                                                                               |                                                                                   | 98.4                                                                              |                                                                                   | 14.2                                                                               |                                                                                     | 4.4                                                                                 |                                                                                     | 101.4                                                                               |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             |                                                                                   | 4.6                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | * 4.2                                                                              |                                                                                     | 4.1                                                                                 |                                                                                     | 6.5                                                                                 |                                                                                     |
| Max Green Setting (Gmax), s  | * 29                                                                              |                                                                                   | 5.3                                                                               |                                                                                   | 70.5                                                                              |                                                                                   | * 29                                                                               |                                                                                     | 5.0                                                                                 |                                                                                     | 70.6                                                                                |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.8                                                                               |                                                                                   | 3.6                                                                               |                                                                                   | 27.1                                                                              |                                                                                   | 5.0                                                                                |                                                                                     | 2.1                                                                                 |                                                                                     | 18.5                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 27.7                                                                              |                                                                                   | 0.1                                                                                |                                                                                     | 0.0                                                                                 |                                                                                     | 22.7                                                                                |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 7.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020

|                      |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBR                                                                               | Ø4   |
| Lane Configurations  |  |  |                                                                                   |  |  |      |
| Traffic Volume (vph) | 5                                                                                 | 1226                                                                              | 2                                                                                 | 2509                                                                              | 6                                                                                 |      |
| Future Volume (vph)  | 5                                                                                 | 1226                                                                              | 2                                                                                 | 2509                                                                              | 6                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Prot                                                                              |      |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 6                                                                                 | 3                                                                                 | 4    |
| Permitted Phases     |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                   |      |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.6                                                                               | 26.6                                                                              | 26.6                                                                              | 26.6                                                                              | 14.1                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 105.4                                                                             | 95.4                                                                              | 95.4                                                                              | 14.6                                                                              | 14.6 |
| Total Split (%)      | 7.4%                                                                              | 78.3%                                                                             | 70.9%                                                                             | 70.9%                                                                             | 10.8%                                                                             | 11%  |
| Yellow Time (s)      | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.6                                                                               | 4.6                                                                               |                                                                                   | 4.6                                                                               | 4.1                                                                               |      |
| Lead/Lag             | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag  |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes  |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Min  |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 92.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|                                                                                        |                                                                                        |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø2 |                                                                                        |  Ø3 |  Ø4 |
| 105.4 s                                                                                |                                                                                        | 14.6 s                                                                                   | 14.6 s                                                                                   |
|  Ø5 |  Ø6 |                                                                                          |                                                                                          |
| 10 s                                                                                   | 95.4 s                                                                                 |                                                                                          |                                                                                          |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

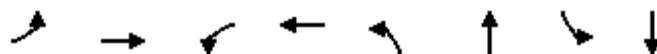
|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |                                                                                   |  |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 5                                                                                 | 1226                                                                              | 5                                                                                 | 2                                                                                 | 2509                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 5                                                                                 | 1226                                                                              | 5                                                                                 | 2                                                                                 | 2509                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 6                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 5                                                                                 | 1333                                                                              | 5                                                                                 | 2                                                                                 | 2727                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 4                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 12                                                                                | 4972                                                                              | 19                                                                                | 54                                                                                | 4327                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.93                                                                              | 0.93                                                                              | 0.86                                                                              | 0.86                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5334                                                                              | 20                                                                                | 0                                                                                 | 5200                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                              | 0                                                                                   |
| Grp Volume(v), veh/h         | 5                                                                                 | 864                                                                               | 474                                                                               | 1027                                                                              | 1702                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1896                                                                              | 1898                                                                              | 1573                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 1.5                                                                               | 1.5                                                                               | 0.0                                                                               | 11.4                                                                              | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 1.5                                                                               | 1.5                                                                               | 11.4                                                                              | 11.4                                                                              | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 0.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 12                                                                                | 3223                                                                              | 1768                                                                              | 1681                                                                              | 2699                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.42                                                                              | 0.27                                                                              | 0.27                                                                              | 0.61                                                                              | 0.63                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 144                                                                               | 5143                                                                              | 2821                                                                              | 2591                                                                              | 4216                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 280                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 33.5                                                                              | 0.2                                                                               | 0.2                                                                               | 1.5                                                                               | 1.5                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 8.3                                                                               | 0.0                                                                               | 0.1                                                                               | 0.4                                                                               | 0.2                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 41.9                                                                              | 0.3                                                                               | 0.3                                                                               | 1.9                                                                               | 1.7                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 1343                                                                              |                                                                                   | 2729                                                                              |                                                                                   |                                                                                   |                                                                                   | 0                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.4                                                                               |                                                                                   | 1.8                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 5                                                                                 | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 67.8                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 5.0                                                                               | 62.7                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.6                                                                               |                                                                                   | 4.6                                                                               | 4.6                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                   | 10.0                                                                              |                                                                                   | 5.4                                                                               | 90.8                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.5                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 2.2                                                                               | 13.4                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 10.3                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               | 44.8                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 4    | 1221  | 12   | 2508  | 3     | 0     | 11    | 0     |
| Future Volume (vph)  | 4    | 1221  | 12   | 2508  | 3     | 0     | 11    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 9.1  | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 7.6% | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag  | Lag   | Lead | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 70

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |                                                                                       |  |  |                                                                                       |  |  |                                                                                         |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                    | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                    | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                        | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  | <br> |                                                                                   |  | <br> |                                                                                   |                                                                                     | <br> |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 1221                                                                                                                                                                   | 7                                                                                 | 12                                                                                | 2508                                                                                                                                                                   | 35                                                                                | 3                                                                                   | 0                                                                                                                                                                          | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1221                                                                                                                                                                   | 7                                                                                 | 12                                                                                | 2508                                                                                                                                                                   | 35                                                                                | 3                                                                                   | 0                                                                                                                                                                          | 14                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                      | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                      | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                            | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                        |                                                                                   | No                                                                                |                                                                                                                                                                        |                                                                                   | No                                                                                  |                                                                                                                                                                            |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                   | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                   | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                       | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 1327                                                                                                                                                                   | 8                                                                                 | 13                                                                                | 2726                                                                                                                                                                   | 38                                                                                | 3                                                                                   | 0                                                                                                                                                                          | 15                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                   | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                   | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                                                                                                       | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                      | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                      | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 112                                                                               | 4278                                                                                                                                                                   | 26                                                                                | 27                                                                                | 3888                                                                                                                                                                   | 54                                                                                | 42                                                                                  | 7                                                                                                                                                                          | 72                                                                                  | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| Arrive On Green              | 0.06                                                                              | 0.80                                                                                                                                                                   | 0.80                                                                              | 0.01                                                                              | 0.74                                                                                                                                                                   | 0.74                                                                              | 0.05                                                                                | 0.00                                                                                                                                                                       | 0.05                                                                                | 0.05                                                                                | 0.00                                                                                | 0.05                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5320                                                                                                                                                                   | 32                                                                                | 1810                                                                              | 5272                                                                                                                                                                   | 73                                                                                | 130                                                                                 | 139                                                                                                                                                                        | 1347                                                                                | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 863                                                                                                                                                                    | 472                                                                               | 13                                                                                | 1785                                                                                                                                                                   | 979                                                                               | 18                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                   | 1894                                                                              | 1810                                                                              | 1729                                                                                                                                                                   | 1887                                                                              | 1616                                                                                | 0                                                                                                                                                                          | 0                                                                                   | 1421                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.2                                                                               | 7.8                                                                                                                                                                    | 7.8                                                                               | 0.9                                                                               | 33.6                                                                                                                                                                   | 34.0                                                                              | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 7.8                                                                                                                                                                    | 7.8                                                                               | 0.9                                                                               | 33.6                                                                                                                                                                   | 34.0                                                                              | 1.3                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                        | 0.02                                                                              | 1.00                                                                              |                                                                                                                                                                        | 0.04                                                                              | 0.17                                                                                |                                                                                                                                                                            | 0.83                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 112                                                                               | 2781                                                                                                                                                                   | 1523                                                                              | 27                                                                                | 2550                                                                                                                                                                   | 1392                                                                              | 122                                                                                 | 0                                                                                                                                                                          | 0                                                                                   | 140                                                                                 | 0                                                                                   | 86                                                                                  |
| V/C Ratio(X)                 | 0.04                                                                              | 0.31                                                                                                                                                                   | 0.31                                                                              | 0.49                                                                              | 0.70                                                                                                                                                                   | 0.70                                                                              | 0.15                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                | 0.09                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 112                                                                               | 2781                                                                                                                                                                   | 1523                                                                              | 78                                                                                | 2550                                                                                                                                                                   | 1392                                                                              | 179                                                                                 | 0                                                                                                                                                                          | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.95                                                                              | 0.95                                                                                                                                                                   | 0.95                                                                              | 0.48                                                                              | 0.48                                                                                                                                                                   | 0.48                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 52.9                                                                              | 3.1                                                                                                                                                                    | 3.1                                                                               | 58.7                                                                              | 8.5                                                                                                                                                                    | 8.6                                                                               | 54.3                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 54.1                                                                                | 0.0                                                                                 | 53.8                                                                                |
| Incr Delay (d2), s/veh       | 0.1                                                                               | 0.3                                                                                                                                                                    | 0.5                                                                               | 2.5                                                                               | 0.8                                                                                                                                                                    | 1.5                                                                               | 0.6                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.3                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                    | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 1.6                                                                                                                                                                    | 1.8                                                                               | 0.4                                                                               | 9.0                                                                                                                                                                    | 10.2                                                                              | 0.5                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 53.0                                                                              | 3.3                                                                                                                                                                    | 3.6                                                                               | 61.2                                                                              | 9.3                                                                                                                                                                    | 10.1                                                                              | 54.9                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 54.3                                                                                | 0.0                                                                                 | 53.8                                                                                |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                      | A                                                                                 | E                                                                                 | A                                                                                                                                                                      | B                                                                                 | D                                                                                   | A                                                                                                                                                                          | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 1339                                                                              |                                                                                                                                                                        |                                                                                   | 2777                                                                              |                                                                                                                                                                        |                                                                                   | 18                                                                                  |                                                                                                                                                                            |                                                                                     | 13                                                                                  |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 3.6                                                                               |                                                                                                                                                                        |                                                                                   | 9.8                                                                               |                                                                                                                                                                        |                                                                                   | 54.9                                                                                |                                                                                                                                                                            |                                                                                     | 54.3                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                        |                                                                                   | A                                                                                 |                                                                                                                                                                        |                                                                                   | D                                                                                   |                                                                                                                                                                            |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                        | 3                                                                                 | 4                                                                                 |                                                                                                                                                                        | 6                                                                                 | 7                                                                                   | 8                                                                                                                                                                          |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.0                                                                              |                                                                                                                                                                        | 6.0                                                                               | 103.0                                                                             |                                                                                                                                                                        | 11.0                                                                              | 14.0                                                                                | 95.0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                        | * 4.2                                                                             | 6.5                                                                               |                                                                                                                                                                        | 4.6                                                                               | 6.5                                                                                 | * 6.5                                                                                                                                                                      |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 10.8                                                                              |                                                                                                                                                                        | * 5.2                                                                             | 88.7                                                                              |                                                                                                                                                                        | 10.8                                                                              | 5.0                                                                                 | * 89                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.3                                                                               |                                                                                                                                                                        | 2.9                                                                               | 9.8                                                                               |                                                                                                                                                                        | 2.8                                                                               | 2.2                                                                                 | 36.0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                        | 0.0                                                                               | 10.3                                                                              |                                                                                                                                                                        | 0.0                                                                               | 0.0                                                                                 | 35.9                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 8.1                                                                               |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020

|                      |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBR                                                                               | Ø4   |
| Lane Configurations  |  |  |  |  |  |      |
| Traffic Volume (vph) | 3                                                                                 | 2688                                                                              | 3                                                                                 | 2421                                                                              | 8                                                                                 |      |
| Future Volume (vph)  | 3                                                                                 | 2688                                                                              | 3                                                                                 | 2421                                                                              | 8                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Prot                                                                              |      |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 6                                                                                 | 3                                                                                 | 4    |
| Permitted Phases     |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                   |      |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.6                                                                               | 26.6                                                                              | 26.6                                                                              | 26.6                                                                              | 14.1                                                                              | 14.6 |
| Total Split (s)      | 12.0                                                                              | 105.4                                                                             | 93.4                                                                              | 93.4                                                                              | 14.6                                                                              | 14.6 |
| Total Split (%)      | 8.9%                                                                              | 78.3%                                                                             | 69.4%                                                                             | 69.4%                                                                             | 10.8%                                                                             | 11%  |
| Yellow Time (s)      | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.1                                                                               |      |
| Lead/Lag             | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag  |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes  |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Min  |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 99.3

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|                                                                                        |                                                                                        |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø2 |                                                                                        |  Ø3 |  Ø4 |
| 105.4 s                                                                                |                                                                                        | 14.6 s                                                                                   | 14.6 s                                                                                   |
|  Ø5 |  Ø6 |                                                                                          |                                                                                          |
| 12 s                                                                                   | 93.4 s                                                                                 |                                                                                          |                                                                                          |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

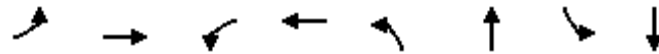
|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 3                                                                                 | 2688                                                                              | 1                                                                                 | 3                                                                                 | 2421                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 3                                                                                 | 2688                                                                              | 1                                                                                 | 3                                                                                 | 2421                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 3                                                                                 | 2922                                                                              | 1                                                                                 | 3                                                                                 | 2632                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 7                                                                                 | 4997                                                                              | 2                                                                                 | 179                                                                               | 4470                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.00                                                                              | 0.93                                                                              | 0.93                                                                              | 0.86                                                                              | 0.86                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5356                                                                              | 2                                                                                 | 87                                                                                | 5358                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                              | 0                                                                                   |
| Grp Volume(v), veh/h         | 3                                                                                 | 1886                                                                              | 1037                                                                              | 3                                                                                 | 2632                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1900                                                                              | 87                                                                                | 1729                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.1                                                                               | 5.5                                                                               | 5.5                                                                               | 0.4                                                                               | 9.8                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 5.5                                                                               | 5.5                                                                               | 1.0                                                                               | 9.8                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 7                                                                                 | 3226                                                                              | 1772                                                                              | 179                                                                               | 4470                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.41                                                                              | 0.58                                                                              | 0.58                                                                              | 0.02                                                                              | 0.59                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 195                                                                               | 5083                                                                              | 2793                                                                              | 217                                                                               | 6717                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 277                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 34.1                                                                              | 0.3                                                                               | 0.3                                                                               | 0.8                                                                               | 1.3                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 13.0                                                                              | 0.2                                                                               | 0.3                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.1                                                                               | 0.2                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 47.1                                                                              | 0.5                                                                               | 0.6                                                                               | 0.8                                                                               | 1.5                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 2926                                                                              |                                                                                   | 2635                                                                              |                                                                                   |                                                                                   |                                                                                   | 0                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.6                                                                               |                                                                                   | 1.5                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 5                                                                                 | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 68.6                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 4.9                                                                               | 63.7                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.6                                                                               |                                                                                   | 4.6                                                                               | 4.6                                                                               |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                   | 10.0                                                                              |                                                                                   | 7.4                                                                               | 88.8                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 7.5                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 2.1                                                                               | 11.8                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 56.4                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               | 45.5                                                                              |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.0                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↰    | ↑↑↑   | ↰    | ↑↑↑   |       | ↕     | ↰     | ↰     |
| Traffic Volume (vph) | 2    | 2683  | 25   | 2412  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2    | 2683  | 25   | 2412  | 2     | 0     | 37    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 9.1  | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 7.6% | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lead | Lag   | Lead | Lag   |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

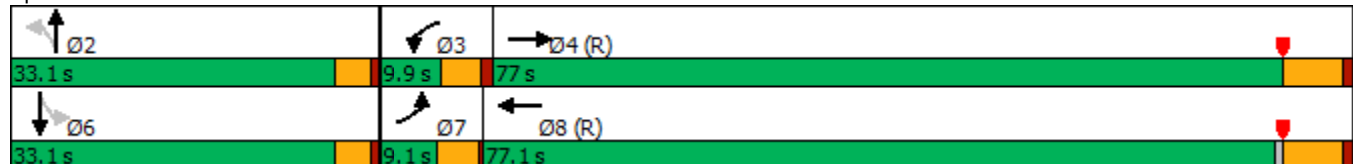
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |                                                                                      |  |                                                                                      |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                                                                                                     | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |                                                                                   |                                                                                    |   |                                                                                     |   |  |                                                                                     |
| Traffic Volume (veh/h)       | 2                                                                                 | 2683                                                                                                                                                                                                                                                  | 13                                                                                | 25                                                                                | 2412                                                                                                                                                                                                                                                  | 16                                                                                | 2                                                                                  | 0                                                                                                                                                                       | 10                                                                                  | 37                                                                                                                                                                      | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)        | 2                                                                                 | 2683                                                                                                                                                                                                                                                  | 13                                                                                | 25                                                                                | 2412                                                                                                                                                                                                                                                  | 16                                                                                | 2                                                                                  | 0                                                                                                                                                                       | 10                                                                                  | 37                                                                                                                                                                      | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 1.00                                                                                | 1.00                                                                                                                                                                    |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                                                                                                         |                                                                                     | No                                                                                                                                                                      |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                               | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 2                                                                                 | 2916                                                                                                                                                                                                                                                  | 14                                                                                | 27                                                                                | 2622                                                                                                                                                                                                                                                  | 17                                                                                | 2                                                                                  | 0                                                                                                                                                                       | 11                                                                                  | 40                                                                                                                                                                      | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                                                                                                    | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 5                                                                                 | 4073                                                                                                                                                                                                                                                  | 20                                                                                | 45                                                                                | 4204                                                                                                                                                                                                                                                  | 27                                                                                | 42                                                                                 | 13                                                                                                                                                                      | 114                                                                                 | 182                                                                                                                                                                     | 0                                                                                   | 134                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.76                                                                                                                                                                                                                                                  | 0.76                                                                              | 0.02                                                                              | 0.79                                                                                                                                                                                                                                                  | 0.79                                                                              | 0.08                                                                               | 0.00                                                                                                                                                                    | 0.08                                                                                | 0.08                                                                                                                                                                    | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5328                                                                                                                                                                                                                                                  | 26                                                                                | 1810                                                                              | 5317                                                                                                                                                                                                                                                  | 34                                                                                | 92                                                                                 | 158                                                                                                                                                                     | 1373                                                                                | 1426                                                                                                                                                                    | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 2                                                                                 | 1891                                                                                                                                                                                                                                                  | 1039                                                                              | 27                                                                                | 1704                                                                                                                                                                                                                                                  | 935                                                                               | 13                                                                                 | 0                                                                                                                                                                       | 0                                                                                   | 40                                                                                                                                                                      | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1895                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1894                                                                              | 1623                                                                               | 0                                                                                                                                                                       | 0                                                                                   | 1426                                                                                                                                                                    | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 34.1                                                                                                                                                                                                                                                  | 34.3                                                                              | 1.8                                                                               | 24.4                                                                                                                                                                                                                                                  | 24.5                                                                              | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 2.1                                                                                                                                                                     | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 34.1                                                                                                                                                                                                                                                  | 34.3                                                                              | 1.8                                                                               | 24.4                                                                                                                                                                                                                                                  | 24.5                                                                              | 0.9                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 2.9                                                                                                                                                                     | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.01                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.02                                                                              | 0.15                                                                               |                                                                                                                                                                         | 0.85                                                                                | 1.00                                                                                                                                                                    |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 5                                                                                 | 2643                                                                                                                                                                                                                                                  | 1449                                                                              | 45                                                                                | 2734                                                                                                                                                                                                                                                  | 1497                                                                              | 170                                                                                | 0                                                                                                                                                                       | 0                                                                                   | 182                                                                                                                                                                     | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                 | 0.41                                                                              | 0.72                                                                                                                                                                                                                                                  | 0.72                                                                              | 0.60                                                                              | 0.62                                                                                                                                                                                                                                                  | 0.62                                                                              | 0.08                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 0.22                                                                                                                                                                    | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2643                                                                                                                                                                                                                                                  | 1449                                                                              | 80                                                                                | 2734                                                                                                                                                                                                                                                  | 1497                                                                              | 419                                                                                | 0                                                                                                                                                                       | 0                                                                                   | 406                                                                                                                                                                     | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 0.62                                                                              | 0.62                                                                                                                                                                                                                                                  | 0.62                                                                              | 0.53                                                                              | 0.53                                                                                                                                                                                                                                                  | 0.53                                                                              | 1.00                                                                               | 0.00                                                                                                                                                                    | 0.00                                                                                | 1.00                                                                                                                                                                    | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.7                                                                              | 7.3                                                                                                                                                                                                                                                   | 7.4                                                                               | 57.9                                                                              | 5.2                                                                                                                                                                                                                                                   | 5.2                                                                               | 50.8                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 51.7                                                                                                                                                                    | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh       | 31.0                                                                              | 1.1                                                                                                                                                                                                                                                   | 1.9                                                                               | 2.6                                                                               | 0.6                                                                                                                                                                                                                                                   | 1.1                                                                               | 0.2                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.6                                                                                                                                                                     | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 8.4                                                                                                                                                                                                                                                   | 9.6                                                                               | 0.8                                                                               | 5.2                                                                                                                                                                                                                                                   | 6.0                                                                               | 0.4                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 1.2                                                                                                                                                                     | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 90.8                                                                              | 8.4                                                                                                                                                                                                                                                   | 9.3                                                                               | 60.5                                                                              | 5.8                                                                                                                                                                                                                                                   | 6.2                                                                               | 51.0                                                                               | 0.0                                                                                                                                                                     | 0.0                                                                                 | 52.3                                                                                                                                                                    | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                    | F                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | E                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | D                                                                                  | A                                                                                                                                                                       | A                                                                                   | D                                                                                                                                                                       | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2932                                                                              |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 2666                                                                                                                                                                                                                                                  |                                                                                   | 13                                                                                 |                                                                                                                                                                         |                                                                                     |                                                                                                                                                                         | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 8.8                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | 6.5                                                                                                                                                                                                                                                   |                                                                                   | 51.0                                                                               |                                                                                                                                                                         |                                                                                     |                                                                                                                                                                         | 52.1                                                                                |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   | A                                                                                                                                                                                                                                                     |                                                                                   | D                                                                                  |                                                                                                                                                                         |                                                                                     |                                                                                                                                                                         | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 3                                                                                 | 4                                                                                 |                                                                                                                                                                                                                                                       | 6                                                                                 | 7                                                                                  | 8                                                                                                                                                                       |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.2                                                                              |                                                                                                                                                                                                                                                       | 7.6                                                                               | 98.2                                                                              |                                                                                                                                                                                                                                                       | 14.2                                                                              | 4.4                                                                                | 101.4                                                                                                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             |                                                                                                                                                                                                                                                       | 4.6                                                                               | 6.5                                                                               |                                                                                                                                                                                                                                                       | * 4.2                                                                             | 4.1                                                                                | 6.5                                                                                                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 29                                                                              |                                                                                                                                                                                                                                                       | 5.3                                                                               | 70.5                                                                              |                                                                                                                                                                                                                                                       | * 29                                                                              | 5.0                                                                                | 70.6                                                                                                                                                                    |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+l1), s | 2.9                                                                               |                                                                                                                                                                                                                                                       | 3.8                                                                               | 36.3                                                                              |                                                                                                                                                                                                                                                       | 4.9                                                                               | 2.1                                                                                | 26.5                                                                                                                                                                    |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               | 27.9                                                                              |                                                                                                                                                                                                                                                       | 0.1                                                                               | 0.0                                                                                | 29.9                                                                                                                                                                    |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 8.1                                                                               |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| HCM 6th LOS                  | A                                                                                 |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                                                                                                         |                                                                                     |                                                                                     |

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020

|                      |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBR                                                                               | Ø4   |
| Lane Configurations  |  |  |  |  |  |      |
| Traffic Volume (vph) | 6                                                                                 | 1882                                                                              | 2                                                                                 | 3448                                                                              | 7                                                                                 |      |
| Future Volume (vph)  | 6                                                                                 | 1882                                                                              | 2                                                                                 | 3448                                                                              | 7                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Prot                                                                              |      |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 6                                                                                 | 3                                                                                 | 4    |
| Permitted Phases     |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                   |      |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.6                                                                               | 26.6                                                                              | 26.6                                                                              | 26.6                                                                              | 14.1                                                                              | 14.6 |
| Total Split (s)      | 10.0                                                                              | 105.4                                                                             | 95.4                                                                              | 95.4                                                                              | 14.6                                                                              | 14.6 |
| Total Split (%)      | 7.4%                                                                              | 78.3%                                                                             | 70.9%                                                                             | 70.9%                                                                             | 10.8%                                                                             | 11%  |
| Yellow Time (s)      | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.1                                                                               |      |
| Lead/Lag             | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag  |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes  |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Min  |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 114.8

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|                                                                                        |                                                                                        |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø2 |                                                                                        |  Ø3 |  Ø4 |
| 105.4 s                                                                                |                                                                                        | 14.6 s                                                                                   | 14.6 s                                                                                   |
|  Ø5 |  Ø6 |                                                                                          |                                                                                          |
| 10 s                                                                                   | 95.4 s                                                                                 |                                                                                          |                                                                                          |

# HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)

## 3: Private Driveway & Alessandro Bl.

08/11/2020

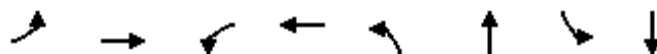
|                              |  |                                                                                                                                                                      |  |  |                                                                                                                                                                      |  |  |  |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                   | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                   | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |    |                                                                                   |  |    |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |   |                                                                                     |
| Traffic Volume (veh/h)       | 6                                                                                 | 1882                                                                                                                                                                                                                                                  | 6                                                                                 | 2                                                                                 | 3448                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Future Volume (veh/h)        | 6                                                                                 | 1882                                                                                                                                                                                                                                                  | 6                                                                                 | 2                                                                                 | 3448                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                       |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                  | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                                                                                                    | 1900                                                                                |
| Adj Flow Rate, veh/h         | 7                                                                                 | 2046                                                                                                                                                                                                                                                  | 7                                                                                 | 2                                                                                 | 3748                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 5                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                  | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                                                                                                    | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                     | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Cap, veh/h                   | 16                                                                                | 5085                                                                                                                                                                                                                                                  | 17                                                                                | 260                                                                               | 4653                                                                                                                                                                                                                                                  | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2                                                                                                                                                                       | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.95                                                                                                                                                                                                                                                  | 0.95                                                                              | 0.90                                                                              | 0.90                                                                                                                                                                                                                                                  | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5336                                                                                                                                                                                                                                                  | 18                                                                                | 208                                                                               | 5358                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                                                                                                                  | 0                                                                                   |
| Grp Volume(v), veh/h         | 7                                                                                 | 1326                                                                                                                                                                                                                                                  | 727                                                                               | 2                                                                                 | 3748                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                  | 1897                                                                              | 208                                                                               | 1729                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                                                                                                    | 0                                                                                   |
| Q Serve(g_s), s              | 0.4                                                                               | 2.9                                                                                                                                                                                                                                                   | 2.9                                                                               | 0.1                                                                               | 26.2                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.4                                                                               | 2.9                                                                                                                                                                                                                                                   | 2.9                                                                               | 0.1                                                                               | 26.2                                                                                                                                                                                                                                                  | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.01                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                       | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                                                                                                         | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 16                                                                                | 3295                                                                                                                                                                                                                                                  | 1807                                                                              | 260                                                                               | 4653                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 2                                                                                                                                                                       | 0                                                                                   |
| V/C Ratio(X)                 | 0.44                                                                              | 0.40                                                                                                                                                                                                                                                  | 0.40                                                                              | 0.01                                                                              | 0.81                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 100                                                                               | 3569                                                                                                                                                                                                                                                  | 1957                                                                              | 267                                                                               | 4822                                                                                                                                                                                                                                                  | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 195                                                                                                                                                                     | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(l)           | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                  | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                                                                                                    | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 48.2                                                                              | 0.2                                                                                                                                                                                                                                                   | 0.2                                                                               | 0.5                                                                               | 1.9                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 6.8                                                                               | 0.1                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 1.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.2                                                                               | 0.0                                                                                                                                                                                                                                                   | 0.1                                                                               | 0.0                                                                               | 0.4                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 55.0                                                                              | 0.3                                                                                                                                                                                                                                                   | 0.3                                                                               | 0.5                                                                               | 2.9                                                                                                                                                                                                                                                   | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 | A                                                                                 | A                                                                                                                                                                                                                                                     | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                                                                                                       | A                                                                                   |
| Approach Vol, veh/h          | 2060                                                                              |                                                                                                                                                                                                                                                       | 3750                                                                              |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 0                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        | 0.5                                                                               |                                                                                                                                                                                                                                                       | 2.9                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                       | 4                                                                                 |                                                                                   | 5                                                                                                                                                                                                                                                     |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 97.7                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   | 5.5                                                                                                                                                                                                                                                   |                                                                                   | 92.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                       | 4.6                                                                               |                                                                                   | 4.6                                                                                                                                                                                                                                                   |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                                                                                                                                                                                       | 10.0                                                                              |                                                                                   | 5.4                                                                                                                                                                                                                                                   |                                                                                   | 90.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 4.9                                                                               |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   | 2.4                                                                                                                                                                                                                                                   |                                                                                   | 28.2                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 24.4                                                                              |                                                                                                                                                                                                                                                       | 0.0                                                                               |                                                                                   | 0.0                                                                                                                                                                                                                                                   |                                                                                   | 59.4                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                                                                                                                                                                                       | 2.0                                                                               |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                                                                                                                                                                                       | A                                                                                 |                                                                                   |                                                                                                                                                                                                                                                       |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  |      |       |      |       |       |       |       |       |
| Traffic Volume (vph) | 4    | 1885  | 14   | 3449  | 4     | 0     | 11    | 0     |
| Future Volume (vph)  | 4    | 1885  | 14   | 3449  | 4     | 0     | 11    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 10.0  | 5.0  | 10.0  | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 16.5  | 9.2  | 16.5  | 14.6  | 14.6  | 14.6  | 14.6  |
| Total Split (s)      | 9.1  | 95.2  | 9.4  | 95.0  | 15.4  | 15.4  | 15.4  | 15.4  |
| Total Split (%)      | 7.6% | 79.3% | 7.8% | 79.2% | 12.8% | 12.8% | 12.8% | 12.8% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.2  | 5.5   | 3.6   | 3.6   | 3.6   | 3.6   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.2  | 6.5   |       | 4.6   | 4.6   | 4.6   |
| Lead/Lag             | Lag  | Lag   | Lead | Lead  |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | None  | None  | None  | None  |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 103.9 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |                                                                                                                                                                            |  |  |                                                                                                                                                                            |  |  |                                                                                         |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                                                                                                         | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                                                                                                         | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                        | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  | <br><br> |                                                                                   |  | <br><br> |                                                                                   |                                                                                     | <br> |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 1885                                                                                                                                                                                                                                                        | 8                                                                                 | 14                                                                                | 3449                                                                                                                                                                                                                                                        | 35                                                                                | 4                                                                                   | 0                                                                                                                                                                          | 17                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 1885                                                                                                                                                                                                                                                        | 8                                                                                 | 14                                                                                | 3449                                                                                                                                                                                                                                                        | 35                                                                                | 4                                                                                   | 0                                                                                                                                                                          | 17                                                                                  | 11                                                                                  | 0                                                                                   | 1                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                            | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                |                                                                                                                                                                                                                                                             |                                                                                   | No                                                                                  |                                                                                                                                                                            |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                              | 1900                                                                                                                                                                                                                                                        | 1900                                                                              | 1900                                                                                | 1900                                                                                                                                                                       | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 2049                                                                                                                                                                                                                                                        | 9                                                                                 | 15                                                                                | 3749                                                                                                                                                                                                                                                        | 38                                                                                | 4                                                                                   | 0                                                                                                                                                                          | 18                                                                                  | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                                                                                                                                                                                                        | 0.92                                                                              | 0.92                                                                                | 0.92                                                                                                                                                                       | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                                                                                                           | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 106                                                                               | 4257                                                                                                                                                                                                                                                        | 19                                                                                | 30                                                                                | 3905                                                                                                                                                                                                                                                        | 39                                                                                | 44                                                                                  | 9                                                                                                                                                                          | 76                                                                                  | 146                                                                                 | 0                                                                                   | 92                                                                                  |
| Arrive On Green              | 0.06                                                                              | 0.80                                                                                                                                                                                                                                                        | 0.80                                                                              | 0.02                                                                              | 0.74                                                                                                                                                                                                                                                        | 0.74                                                                              | 0.06                                                                                | 0.00                                                                                                                                                                       | 0.06                                                                                | 0.06                                                                                | 0.00                                                                                | 0.06                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5330                                                                                                                                                                                                                                                        | 23                                                                                | 1810                                                                              | 5295                                                                                                                                                                                                                                                        | 53                                                                                | 145                                                                                 | 149                                                                                                                                                                        | 1322                                                                                | 1417                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 4                                                                                 | 1329                                                                                                                                                                                                                                                        | 729                                                                               | 15                                                                                | 2444                                                                                                                                                                                                                                                        | 1343                                                                              | 22                                                                                  | 0                                                                                                                                                                          | 0                                                                                   | 12                                                                                  | 0                                                                                   | 1                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 1896                                                                              | 1810                                                                              | 1729                                                                                                                                                                                                                                                        | 1890                                                                              | 1616                                                                                | 0                                                                                                                                                                          | 0                                                                                   | 1417                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.3                                                                               | 15.1                                                                                                                                                                                                                                                        | 15.1                                                                              | 1.0                                                                               | 75.9                                                                                                                                                                                                                                                        | 77.3                                                                              | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Cycle Q Clear(g_c), s        | 0.3                                                                               | 15.1                                                                                                                                                                                                                                                        | 15.1                                                                              | 1.0                                                                               | 75.9                                                                                                                                                                                                                                                        | 77.3                                                                              | 1.5                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.01                                                                              | 1.00                                                                              |                                                                                                                                                                                                                                                             | 0.03                                                                              | 0.18                                                                                |                                                                                                                                                                            | 0.82                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 106                                                                               | 2762                                                                                                                                                                                                                                                        | 1514                                                                              | 30                                                                                | 2550                                                                                                                                                                                                                                                        | 1394                                                                              | 128                                                                                 | 0                                                                                                                                                                          | 0                                                                                   | 146                                                                                 | 0                                                                                   | 92                                                                                  |
| V/C Ratio(X)                 | 0.04                                                                              | 0.48                                                                                                                                                                                                                                                        | 0.48                                                                              | 0.51                                                                              | 0.96                                                                                                                                                                                                                                                        | 0.96                                                                              | 0.17                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                | 0.08                                                                                | 0.00                                                                                | 0.01                                                                                |
| Avail Cap(c_a), veh/h        | 106                                                                               | 2762                                                                                                                                                                                                                                                        | 1514                                                                              | 78                                                                                | 2550                                                                                                                                                                                                                                                        | 1394                                                                              | 180                                                                                 | 0                                                                                                                                                                          | 0                                                                                   | 192                                                                                 | 0                                                                                   | 145                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 0.87                                                                              | 0.87                                                                                                                                                                                                                                                        | 0.87                                                                              | 0.09                                                                              | 0.09                                                                                                                                                                                                                                                        | 0.09                                                                              | 1.00                                                                                | 0.00                                                                                                                                                                       | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 53.3                                                                              | 3.9                                                                                                                                                                                                                                                         | 3.9                                                                               | 58.5                                                                              | 14.1                                                                                                                                                                                                                                                        | 14.3                                                                              | 54.0                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 53.7                                                                                | 0.0                                                                                 | 53.3                                                                                |
| Incr Delay (d2), s/veh       | 0.1                                                                               | 0.5                                                                                                                                                                                                                                                         | 1.0                                                                               | 0.4                                                                               | 1.4                                                                                                                                                                                                                                                         | 2.6                                                                               | 0.6                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.2                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                                                                                                         | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 3.1                                                                                                                                                                                                                                                         | 3.6                                                                               | 0.4                                                                               | 20.3                                                                                                                                                                                                                                                        | 23.0                                                                              | 0.7                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.4                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 53.4                                                                              | 4.5                                                                                                                                                                                                                                                         | 4.9                                                                               | 59.0                                                                              | 15.5                                                                                                                                                                                                                                                        | 16.9                                                                              | 54.7                                                                                | 0.0                                                                                                                                                                        | 0.0                                                                                 | 53.9                                                                                | 0.0                                                                                 | 53.4                                                                                |
| LnGrp LOS                    | D                                                                                 | A                                                                                                                                                                                                                                                           | A                                                                                 | E                                                                                 | B                                                                                                                                                                                                                                                           | B                                                                                 | D                                                                                   | A                                                                                                                                                                          | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 2062                                                                              |                                                                                                                                                                                                                                                             | 3802                                                                              |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   | 22                                                                                  |                                                                                                                                                                            | 13                                                                                  |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 4.7                                                                               |                                                                                                                                                                                                                                                             | 16.1                                                                              |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   | 54.7                                                                                |                                                                                                                                                                            | 53.9                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                                                                                                                                                                                             | B                                                                                 |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   | D                                                                                   |                                                                                                                                                                            | D                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                                                                                                                                                                                             | 3                                                                                 |                                                                                   | 4                                                                                                                                                                                                                                                           |                                                                                   | 6                                                                                   |                                                                                                                                                                            | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 11.5                                                                              |                                                                                                                                                                                                                                                             | 6.2                                                                               |                                                                                   | 102.3                                                                                                                                                                                                                                                       |                                                                                   | 11.5                                                                                |                                                                                                                                                                            | 13.5                                                                                |                                                                                     | 95.0                                                                                |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                                                                                                                                                                                             | * 4.2                                                                             |                                                                                   | 6.5                                                                                                                                                                                                                                                         |                                                                                   | 4.6                                                                                 |                                                                                                                                                                            | 6.5                                                                                 |                                                                                     | * 6.5                                                                               |                                                                                     |
| Max Green Setting (Gmax), s  | 10.8                                                                              |                                                                                                                                                                                                                                                             | * 5.2                                                                             |                                                                                   | 88.7                                                                                                                                                                                                                                                        |                                                                                   | 10.8                                                                                |                                                                                                                                                                            | 5.0                                                                                 |                                                                                     | * 89                                                                                |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 3.5                                                                               |                                                                                                                                                                                                                                                             | 3.0                                                                               |                                                                                   | 17.1                                                                                                                                                                                                                                                        |                                                                                   | 2.8                                                                                 |                                                                                                                                                                            | 2.3                                                                                 |                                                                                     | 79.3                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                                                                                                                                                                                             | 0.0                                                                               |                                                                                   | 23.4                                                                                                                                                                                                                                                        |                                                                                   | 0.0                                                                                 |                                                                                                                                                                            | 0.0                                                                                 |                                                                                     | 9.1                                                                                 |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           | 12.4                                                                              |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  | B                                                                                 |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timings  
3: Private Driveway & Alessandro Bl.

Sycamore Hills Distribution Center TIA (JN 12014)

08/11/2020

|                      |  |  |  |  |  |      |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | NBR                                                                               | Ø4   |
| Lane Configurations  |  |  |  |  |  |      |
| Traffic Volume (vph) | 4                                                                                 | 3365                                                                              | 4                                                                                 | 2879                                                                              | 8                                                                                 |      |
| Future Volume (vph)  | 4                                                                                 | 3365                                                                              | 4                                                                                 | 2879                                                                              | 8                                                                                 |      |
| Turn Type            | Prot                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Prot                                                                              |      |
| Protected Phases     | 5                                                                                 | 2                                                                                 |                                                                                   | 6                                                                                 | 3                                                                                 | 4    |
| Permitted Phases     |                                                                                   |                                                                                   | 6                                                                                 |                                                                                   |                                                                                   |      |
| Detector Phase       | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 | 3                                                                                 |      |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |
| Minimum Initial (s)  | 5.0                                                                               | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0                                                                              | 10.0 |
| Minimum Split (s)    | 9.6                                                                               | 26.6                                                                              | 26.6                                                                              | 26.6                                                                              | 14.1                                                                              | 14.6 |
| Total Split (s)      | 12.0                                                                              | 105.4                                                                             | 93.4                                                                              | 93.4                                                                              | 14.6                                                                              | 14.6 |
| Total Split (%)      | 8.9%                                                                              | 78.3%                                                                             | 69.4%                                                                             | 69.4%                                                                             | 10.8%                                                                             | 11%  |
| Yellow Time (s)      | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6                                                                               | 3.6  |
| All-Red Time (s)     | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 0.5                                                                               | 1.0  |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |      |
| Total Lost Time (s)  | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.6                                                                               | 4.1                                                                               |      |
| Lead/Lag             | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag  |
| Lead-Lag Optimize?   | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes  |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | Min  |

Intersection Summary

Cycle Length: 134.6

Actuated Cycle Length: 122.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Private Driveway & Alessandro Bl.

|                                                                                        |                                                                                        |                                                                                          |                                                                                          |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø2 |                                                                                        |  Ø3 |  Ø4 |
| 105.4 s                                                                                |                                                                                        | 14.6 s                                                                                   | 14.6 s                                                                                   |
|  Ø5 |  Ø6 |                                                                                          |                                                                                          |
| 12 s                                                                                   | 93.4 s                                                                                 |                                                                                          |                                                                                          |

HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 3: Private Driveway & Alessandro Bl. 08/11/2020

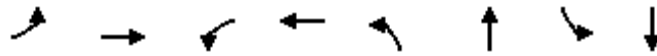
|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |                                                                                     |  |                                                                                     |  |                                                                                     |
| Traffic Volume (veh/h)       | 4                                                                                 | 3365                                                                              | 1                                                                                 | 4                                                                                 | 2879                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Future Volume (veh/h)        | 4                                                                                 | 3365                                                                              | 1                                                                                 | 4                                                                                 | 2879                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 8                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 0                                                                                  | 0                                                                                   | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 4                                                                                 | 3658                                                                              | 1                                                                                 | 4                                                                                 | 3129                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 7                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 10                                                                                | 5417                                                                              | 1                                                                                 | 113                                                                               | 5107                                                                              | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 2                                                                                   | 0                                                                                   |
| Arrive On Green              | 0.01                                                                              | 0.95                                                                              | 0.95                                                                              | 0.90                                                                              | 0.90                                                                              | 0.00                                                                              | 0.00                                                                               | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5698                                                                              | 2                                                                                 | 41                                                                                | 5700                                                                              | 0                                                                                 |                                                                                    | 0                                                                                   |                                                                                     | 0                                                                                   | -87400                                                                              | 0                                                                                   |
| Grp Volume(v), veh/h         | 4                                                                                 | 2439                                                                              | 1220                                                                              | 4                                                                                 | 3129                                                                              | 0                                                                                 |                                                                                    | 0.0                                                                                 |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1900                                                                              | 1900                                                                              | 41                                                                                | 1900                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 1900                                                                                | 0                                                                                   |
| Q Serve(g_s), s              | 0.2                                                                               | 8.2                                                                               | 8.3                                                                               | 1.4                                                                               | 11.8                                                                              | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Cycle Q Clear(g_c), s        | 0.2                                                                               | 8.2                                                                               | 8.3                                                                               | 4.5                                                                               | 11.8                                                                              | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                |                                                                                     | 0.00                                                                                |
| Lane Grp Cap(c), veh/h       | 10                                                                                | 3612                                                                              | 1806                                                                              | 113                                                                               | 5107                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 2                                                                                   | 0                                                                                   |
| V/C Ratio(X)                 | 0.42                                                                              | 0.68                                                                              | 0.68                                                                              | 0.04                                                                              | 0.61                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Avail Cap(c_a), veh/h        | 144                                                                               | 4114                                                                              | 2057                                                                              | 115                                                                               | 5436                                                                              | 0                                                                                 |                                                                                    |                                                                                     |                                                                                     | 0                                                                                   | 204                                                                                 | 0                                                                                   |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              |                                                                                    |                                                                                     |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |
| Uniform Delay (d), s/veh     | 46.2                                                                              | 0.3                                                                               | 0.3                                                                               | 1.0                                                                               | 1.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Incr Delay (d2), s/veh       | 10.5                                                                              | 0.4                                                                               | 0.7                                                                               | 0.1                                                                               | 0.2                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 0.2                                                                               | 0.4                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 56.6                                                                              | 0.7                                                                               | 1.1                                                                               | 1.1                                                                               | 1.3                                                                               | 0.0                                                                               |                                                                                    |                                                                                     |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| LnGrp LOS                    | E                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |                                                                                    |                                                                                     |                                                                                     | A                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 3663                                                                              |                                                                                   | 3133                                                                              |                                                                                   |                                                                                   |                                                                                   | 0                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 0.9                                                                               |                                                                                   | 1.3                                                                               |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                 | A                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 5                                                                                 |                                                                                   | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 93.1                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 5.1                                                                               |                                                                                   | 88.0                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | 4.6                                                                               |                                                                                   | 4.6                                                                               |                                                                                   | 4.6                                                                               |                                                                                   | 4.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | 100.8                                                                             |                                                                                   | 10.0                                                                              |                                                                                   | 7.4                                                                               |                                                                                   | 88.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 10.3                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 2.2                                                                               |                                                                                   | 13.8                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 78.3                                                                              |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 59.6                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 1.1                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

# Sycamore Hills Distribution Center TIA (JN 12014)

## 4: Vista Grande Dr. & Alessandro Bl.

08/11/2020



| Lane Group           | EBL  | EBT   | WBL  | WBT   | NBL   | NBT   | SBL   | SBT   |
|----------------------|------|-------|------|-------|-------|-------|-------|-------|
| Lane Configurations  | ↰    | ↑↑↑   | ↰    | ↑↑↑   |       | ↕     | ↰     | ↰     |
| Traffic Volume (vph) | 2    | 3371  | 27   | 2878  | 2     | 0     | 37    | 0     |
| Future Volume (vph)  | 2    | 3371  | 27   | 2878  | 2     | 0     | 37    | 0     |
| Turn Type            | Prot | NA    | Prot | NA    | Perm  | NA    | Perm  | NA    |
| Protected Phases     | 7    | 4     | 3    | 8     |       | 2     |       | 6     |
| Permitted Phases     |      |       |      |       | 2     |       | 6     |       |
| Detector Phase       | 7    | 4     | 3    | 8     | 2     | 2     | 6     | 6     |
| Switch Phase         |      |       |      |       |       |       |       |       |
| Minimum Initial (s)  | 5.0  | 5.0   | 5.0  | 5.0   | 10.0  | 10.0  | 10.0  | 10.0  |
| Minimum Split (s)    | 9.1  | 11.5  | 9.6  | 11.5  | 14.2  | 14.2  | 14.2  | 14.2  |
| Total Split (s)      | 9.1  | 77.0  | 9.9  | 77.1  | 33.1  | 33.1  | 33.1  | 33.1  |
| Total Split (%)      | 7.6% | 64.2% | 8.3% | 64.3% | 27.6% | 27.6% | 27.6% | 27.6% |
| Yellow Time (s)      | 3.6  | 5.5   | 3.6  | 5.5   | 3.2   | 3.2   | 3.2   | 3.2   |
| All-Red Time (s)     | 0.5  | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s) | 0.0  | 0.0   | 0.0  | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)  | 4.1  | 6.5   | 4.6  | 6.5   |       | 4.2   | 4.2   | 4.2   |
| Lead/Lag             | Lead | Lag   | Lead | Lag   |       |       |       |       |
| Lead-Lag Optimize?   | Yes  | Yes   | Yes  | Yes   |       |       |       |       |
| Recall Mode          | None | C-Max | None | C-Max | Min   | Min   | None  | None  |

### Intersection Summary

Cycle Length: 120

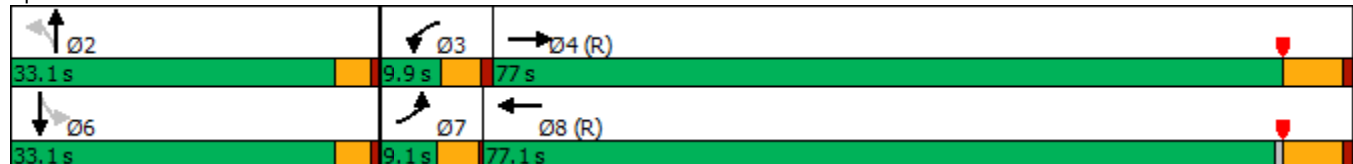
Actuated Cycle Length: 120

Offset: 103.6 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Splits and Phases: 4: Vista Grande Dr. & Alessandro Bl.



HCM 6th Signalized Intersection Summary Sycamore Hills Distribution Center TIA (JN 12014)  
 4: Vista Grande Dr. & Alessandro Bl. 08/11/2020

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |                                                                                   |                                                                                    |  |                                                                                     |  |  |                                                                                     |
| Traffic Volume (veh/h)       | 2                                                                                 | 3371                                                                              | 14                                                                                | 27                                                                                | 2878                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 11                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Future Volume (veh/h)        | 2                                                                                 | 3371                                                                              | 14                                                                                | 27                                                                                | 2878                                                                              | 16                                                                                | 2                                                                                  | 0                                                                                   | 11                                                                                  | 37                                                                                  | 0                                                                                   | 5                                                                                   |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Adj Flow Rate, veh/h         | 2                                                                                 | 3664                                                                              | 15                                                                                | 29                                                                                | 3128                                                                              | 17                                                                                | 2                                                                                  | 0                                                                                   | 12                                                                                  | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Peak Hour Factor             | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %         | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Cap, veh/h                   | 5                                                                                 | 4070                                                                              | 17                                                                                | 47                                                                                | 4209                                                                              | 23                                                                                | 41                                                                                 | 13                                                                                  | 116                                                                                 | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| Arrive On Green              | 0.00                                                                              | 0.76                                                                              | 0.76                                                                              | 0.03                                                                              | 0.79                                                                              | 0.79                                                                              | 0.08                                                                               | 0.00                                                                                | 0.08                                                                                | 0.08                                                                                | 0.00                                                                                | 0.08                                                                                |
| Sat Flow, veh/h              | 1810                                                                              | 5332                                                                              | 22                                                                                | 1810                                                                              | 5324                                                                              | 29                                                                                | 80                                                                                 | 152                                                                                 | 1391                                                                                | 1424                                                                                | 0                                                                                   | 1610                                                                                |
| Grp Volume(v), veh/h         | 2                                                                                 | 2374                                                                              | 1305                                                                              | 29                                                                                | 2030                                                                              | 1115                                                                              | 14                                                                                 | 0                                                                                   | 0                                                                                   | 40                                                                                  | 0                                                                                   | 5                                                                                   |
| Grp Sat Flow(s),veh/h/ln     | 1810                                                                              | 1729                                                                              | 1896                                                                              | 1810                                                                              | 1729                                                                              | 1895                                                                              | 1623                                                                               | 0                                                                                   | 0                                                                                   | 1424                                                                                | 0                                                                                   | 1610                                                                                |
| Q Serve(g_s), s              | 0.1                                                                               | 62.2                                                                              | 62.6                                                                              | 1.9                                                                               | 35.7                                                                              | 35.9                                                                              | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.0                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Cycle Q Clear(g_c), s        | 0.1                                                                               | 62.2                                                                              | 62.6                                                                              | 1.9                                                                               | 35.7                                                                              | 35.9                                                                              | 0.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 2.9                                                                                 | 0.0                                                                                 | 0.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.01                                                                              | 1.00                                                                              |                                                                                   | 0.02                                                                              | 0.14                                                                               |                                                                                     | 0.86                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 5                                                                                 | 2640                                                                              | 1447                                                                              | 47                                                                                | 2734                                                                              | 1498                                                                              | 170                                                                                | 0                                                                                   | 0                                                                                   | 182                                                                                 | 0                                                                                   | 134                                                                                 |
| V/C Ratio(X)                 | 0.41                                                                              | 0.90                                                                              | 0.90                                                                              | 0.62                                                                              | 0.74                                                                              | 0.74                                                                              | 0.08                                                                               | 0.00                                                                                | 0.00                                                                                | 0.22                                                                                | 0.00                                                                                | 0.04                                                                                |
| Avail Cap(c_a), veh/h        | 75                                                                                | 2640                                                                              | 1447                                                                              | 80                                                                                | 2734                                                                              | 1498                                                                              | 419                                                                                | 0                                                                                   | 0                                                                                   | 406                                                                                 | 0                                                                                   | 388                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(l)           | 0.53                                                                              | 0.53                                                                              | 0.53                                                                              | 0.32                                                                              | 0.32                                                                              | 0.32                                                                              | 1.00                                                                               | 0.00                                                                                | 0.00                                                                                | 1.00                                                                                | 0.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 59.7                                                                              | 10.7                                                                              | 10.8                                                                              | 57.9                                                                              | 6.4                                                                               | 6.4                                                                               | 50.8                                                                               | 0.0                                                                                 | 0.0                                                                                 | 51.7                                                                                | 0.0                                                                                 | 50.6                                                                                |
| Incr Delay (d2), s/veh       | 26.9                                                                              | 3.0                                                                               | 5.4                                                                               | 1.6                                                                               | 0.6                                                                               | 1.1                                                                               | 0.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.6                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 0.1                                                                               | 15.8                                                                              | 18.4                                                                              | 0.9                                                                               | 7.6                                                                               | 8.6                                                                               | 0.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 1.2                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 86.6                                                                              | 13.8                                                                              | 16.1                                                                              | 59.5                                                                              | 7.0                                                                               | 7.5                                                                               | 51.1                                                                               | 0.0                                                                                 | 0.0                                                                                 | 52.3                                                                                | 0.0                                                                                 | 50.7                                                                                |
| LnGrp LOS                    | F                                                                                 | B                                                                                 | B                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | D                                                                                  | A                                                                                   | A                                                                                   | D                                                                                   | A                                                                                   | D                                                                                   |
| Approach Vol, veh/h          | 3681                                                                              |                                                                                   |                                                                                   |                                                                                   | 3174                                                                              |                                                                                   | 14                                                                                 |                                                                                     |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Approach Delay, s/veh        | 14.6                                                                              |                                                                                   |                                                                                   |                                                                                   | 7.6                                                                               |                                                                                   | 51.1                                                                               |                                                                                     |                                                                                     |                                                                                     | 52.1                                                                                |                                                                                     |
| Approach LOS                 | B                                                                                 |                                                                                   |                                                                                   |                                                                                   | A                                                                                 |                                                                                   | D                                                                                  |                                                                                     |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |
| Timer - Assigned Phs         | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 6                                                                                  |                                                                                     | 7                                                                                   |                                                                                     | 8                                                                                   |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 14.2                                                                              |                                                                                   | 7.7                                                                               |                                                                                   | 98.1                                                                              |                                                                                   | 14.2                                                                               |                                                                                     | 4.4                                                                                 |                                                                                     | 101.4                                                                               |                                                                                     |
| Change Period (Y+Rc), s      | * 4.2                                                                             |                                                                                   | 4.6                                                                               |                                                                                   | 6.5                                                                               |                                                                                   | * 4.2                                                                              |                                                                                     | 4.1                                                                                 |                                                                                     | 6.5                                                                                 |                                                                                     |
| Max Green Setting (Gmax), s  | * 29                                                                              |                                                                                   | 5.3                                                                               |                                                                                   | 70.5                                                                              |                                                                                   | * 29                                                                               |                                                                                     | 5.0                                                                                 |                                                                                     | 70.6                                                                                |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 2.9                                                                               |                                                                                   | 3.9                                                                               |                                                                                   | 64.6                                                                              |                                                                                   | 4.9                                                                                |                                                                                     | 2.1                                                                                 |                                                                                     | 37.9                                                                                |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               |                                                                                   | 0.0                                                                               |                                                                                   | 5.8                                                                               |                                                                                   | 0.1                                                                                |                                                                                     | 0.0                                                                                 |                                                                                     | 28.4                                                                                |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay           |                                                                                   |                                                                                   | 11.7                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                  |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

## Queuing and Blocking Report

Horizon Year (2040) With Project (Alt. 3) - AM Peak Hour WITH IMPROVEMENTS

08/11/2020

### Intersection: 3: Private Driveway & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB  | WB  | WB  | NB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | L   | T   | T   | TR  | L   | T   | T   | TR  | R   |
| Maximum Queue (ft)    | 51  | 201 | 180 | 140 | 199 | 528 | 528 | 528 | 50  |
| Average Queue (ft)    | 5   | 53  | 48  | 44  | 9   | 153 | 175 | 180 | 11  |
| 95th Queue (ft)       | 26  | 134 | 125 | 116 | 68  | 409 | 439 | 441 | 35  |
| Link Distance (ft)    |     | 592 | 592 | 592 |     | 528 | 528 | 528 | 346 |
| Upstream Blk Time (%) |     |     |     |     |     | 0   | 0   | 0   |     |
| Queuing Penalty (veh) |     |     |     |     |     | 1   | 2   | 2   |     |
| Storage Bay Dist (ft) | 150 |     |     |     | 110 |     |     |     |     |
| Storage Blk Time (%)  |     | 0   |     |     |     | 6   |     |     |     |
| Queuing Penalty (veh) |     | 0   |     |     |     | 0   |     |     |     |

### Intersection: 4: Vista Grande Dr. & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB   | WB   | WB   | NB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----|
| Directions Served     | L   | T   | T   | TR  | L   | T    | T    | TR   | LTR | L   | TR  |
| Maximum Queue (ft)    | 31  | 118 | 143 | 100 | 92  | 4021 | 4064 | 1234 | 54  | 47  | 30  |
| Average Queue (ft)    | 6   | 23  | 31  | 28  | 22  | 439  | 723  | 209  | 19  | 16  | 1   |
| 95th Queue (ft)       | 22  | 68  | 90  | 84  | 56  | 2086 | 2899 | 745  | 47  | 39  | 10  |
| Link Distance (ft)    |     | 528 | 528 | 528 |     | 4017 | 4017 | 4017 | 833 |     | 749 |
| Upstream Blk Time (%) |     |     |     |     |     | 0    | 0    |      |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     | 1    | 2    |      |     |     |     |
| Storage Bay Dist (ft) | 155 |     |     |     | 155 |      |      |      |     | 150 |     |
| Storage Blk Time (%)  |     |     |     |     |     | 7    |      |      |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     | 1    |      |      |     |     |     |

### Zone Summary

Zone wide Queuing Penalty: 9

## Queuing and Blocking Report

Horizon Year (2040) With Project (Alt. 3) - PM Peak Hour WITH IMPROVEMENTS

08/11/2020

### Intersection: 3: Private Driveway & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB  | WB  | WB  | NB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | L   | T   | T   | TR  | L   | T   | T   | TR  | R   |
| Maximum Queue (ft)    | 28  | 594 | 632 | 638 | 31  | 225 | 248 | 270 | 53  |
| Average Queue (ft)    | 1   | 111 | 154 | 148 | 8   | 35  | 42  | 44  | 9   |
| 95th Queue (ft)       | 10  | 378 | 476 | 455 | 28  | 128 | 143 | 151 | 34  |
| Link Distance (ft)    |     | 598 | 598 | 598 |     | 542 | 542 | 542 | 279 |
| Upstream Blk Time (%) |     | 0   | 0   | 0   |     |     |     |     |     |
| Queuing Penalty (veh) |     | 1   | 0   | 1   |     |     |     |     |     |
| Storage Bay Dist (ft) | 150 |     |     |     | 110 |     |     |     |     |
| Storage Blk Time (%)  |     | 3   |     |     |     | 1   |     |     |     |
| Queuing Penalty (veh) |     | 0   |     |     |     | 0   |     |     |     |

### Intersection: 4: Vista Grande Dr. & Alessandro Bl.

| Movement              | EB  | EB  | EB  | EB  | WB  | WB   | WB   | WB   | NB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|------|------|------|-----|-----|-----|
| Directions Served     | L   | T   | T   | TR  | L   | T    | T    | TR   | LTR | L   | TR  |
| Maximum Queue (ft)    | 30  | 403 | 400 | 447 | 95  | 93   | 118  | 136  | 51  | 96  | 31  |
| Average Queue (ft)    | 4   | 149 | 173 | 170 | 26  | 35   | 39   | 45   | 13  | 27  | 4   |
| 95th Queue (ft)       | 20  | 306 | 316 | 333 | 63  | 75   | 88   | 96   | 41  | 67  | 21  |
| Link Distance (ft)    |     | 542 | 542 | 542 |     | 3997 | 3997 | 3997 | 827 |     | 778 |
| Upstream Blk Time (%) |     |     |     |     |     |      |      |      |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |      |      |      |     |     |     |
| Storage Bay Dist (ft) | 155 |     |     |     | 155 |      |      |      |     | 150 |     |
| Storage Blk Time (%)  |     | 5   |     |     |     |      |      |      |     |     |     |
| Queuing Penalty (veh) |     | 0   |     |     |     |      |      |      |     |     |     |

### Zone Summary

Zone wide Queuing Penalty: 3



October 1, 2020

Ms. Sonya Hooker  
Ruth Villalobos & Associates, Inc.  
3602 Inland Empire Blvd., Suite C310  
Ontario, CA 91764

**SUBJECT: SYCAMORE HILLS DISTRIBUTION CENTER VEHICLE MILES TRAVELLED (VMT) ANALYSIS**

Dear Ms. Sonya Hooker:

The following Vehicle Miles Travelled (VMT) Analysis has been prepared for the proposed Sycamore Hills Distribution Center (**Project**), which is located north of Alessandro Boulevard and east of Barton Street and west of San Geronio Drive within the Sycamore Canyon Business Park Specific Plan (SP) located in the City of Riverside.

**PROJECT OVERVIEW**

The project proposes subdividing the site into two parcels (Parcels 1 and 2), and three lettered parcels (Parcels A, B, and C). Each parcel is proposed to be developed with a high cube transload short-term warehouse building (Buildings A and B). Building A, a 400,000 square foot warehouse, will be constructed on Parcel 1. Building B, a 203,100 square foot warehouse, will be constructed on Parcel 2. Associated improvements include parking, fire lanes, fencing and walls (including retaining walls), landscaping, and water quality treatment areas.

Parcels A and Parcel B consist of existing Restricted Property of natural land, with a supporting jurisdictional feature, totaling approximately 11.6 acres. A 0.67-acre driveway will be constructed through the Restricted Property to provide street access from Alessandro Boulevard to Parcel 1, which would reduce the Restricted Property to 10.93 acres. However, 1.44 acres will be added to Parcel A to mitigate this loss, resulting in a total of 12.37 acres of Restricted Property (net gain of 0.77 acres). A Conservation Easement is proposed to be placed over the amended 12.37 acres of Restricted Property.

A trailhead parking lot is proposed on Parcel C, totaling 1.18 acres, for access to the Sycamore Canyon Wilderness Park. Improvements include a parking lot, sidewalk, shade structure, bike rack, drinking fountain, fencing, and a Fire Department and access gate. Parcel C will be dedicated to the City. Trips generated by the Project's proposed land uses have been estimated based on trip generation rates collected by the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10<sup>th</sup> Edition, 2017. (1) The proposed Project is anticipated to generate a total of 847 vehicle trip-ends per day. (2)

## BACKGROUND

Changes to California Environmental Quality Act (CEQA) Guidelines were adopted in December 2018, which requires all lead agencies to adopt VMT as a replacement for automobile delay-based level of service (LOS) as the new measure for identifying transportation impacts for land use projects. This statewide mandate takes effect July 1, 2020. To aid in this transition, the Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December of 2018) (**Technical Advisory**). (3) Based on OPR's Technical Advisory, the Western Riverside Council of Governments (WRCOG) prepared a WRCOG SB 743 Implementation Pathway Document Package (March 2019) to assist its member agencies with implementation tools necessary to adopt analysis methodology, impact thresholds and mitigation approaches for VMT. To add to the previous work effort, WRCOG in February 2020 released its Recommended Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (**WRCOG Guidelines**), which provides recommendations for specific procedures for complying with the new CEQA requirements for VMT analysis to its member agencies. (4) Utilizing the WRCOG Guidelines, the City of Riverside recently adopted updated Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (**City Guidelines**). (5) The updated City Guidelines have been utilized to prepare this VMT analysis.

## PROJECT SCREENING

Consistent with City Guidelines, projects that meet certain screening thresholds based on their location and project type may be presumed to result in a less than significant transportation impact. The City of Riverside utilizes the WRCOG VMT Screening Tool (**Screening Tool**) to evaluate the following Project Screening Thresholds:

- Transit Priority Area (TPA) Screening
- Low VMT Area Screening
- Project Type Screening

As noted in the City Guidelines, a land use project need only meet one of the above screening thresholds to result in a less than significant impact.

### TPA SCREENING

Consistent with guidance identified in the City Guidelines, projects located within a Transit Priority Area (TPA) (i.e., within ½ mile of an existing "major transit stop"<sup>1</sup> or an existing stop along a "high-quality

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<sup>1</sup> Pub. Resources Code, § 21064.3 ("Major transit stop" means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").

transit corridor”<sup>2</sup>) may be presumed to have a less than significant impact absent substantial evidence to the contrary. However, the presumption may not be appropriate if a project:

- Has a Floor Area Ratio (FAR) of less than 0.75;
- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

Based on the Screening Tool results presented in Attachment A, the Project site is not located within ½ mile of an existing major transit stop, or along a high-quality transit corridor.

**The TPA screening threshold is not met.**

### **LOW VMT AREA SCREENING**

As described in the City Guidelines, “residential and office projects located within a low VMT-generating area may be presumed to have a less than significant impact absent substantial evidence to the contrary.”<sup>3</sup> The Screening Tool uses the sub-regional Riverside Transportation Analysis Model (RIVTAM) to measure VMT performance within individual traffic analysis zones (TAZ’s) within the City. The Project’s physical location based on parcel number is input into the Screening Tool to determine project-generated VMT as compared to the City threshold. Based on the Screening Tool results (see Attachment A), the Project is not located within a low VMT generating zone.

**The Low VMT Area screening threshold is not met.**

### **PROJECT TYPE SCREENING**

The City Guidelines identify that local serving retail or other types of local serving land use projects that are consistent with the current Sustainable Communities Strategy (SCS) or general plan are presumed to have a less than significant impact. City Guidelines also states projects that generate or attract fewer than 110 trips per day are assumed to cause a less than significant impact. As previously noted, the Project is estimated to generate in excess of 110 daily trips and would therefore not be eligible for the project type screening threshold.

**The Project Type screening threshold is not met.**

Since the Project does not meet the City’s project-level VMT screening thresholds, a VMT analysis has been prepared consistent with City Guidelines.

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<sup>2</sup> Pub. Resources Code, § 21155 (“For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.”).

<sup>3</sup> Page 24 of the City Guidelines

## VMT ANALYSIS METHODOLOGY

VMT thresholds adopted by City Council on June 16, 2020 have been used to prepare this analysis. Based on the adopted VMT thresholds applicable to the Project, a significant impact for VMT would occur if the following condition is met:

- For new office and industrial projects, utilizing a threshold consistent with 15% below the City's current baseline VMT Per Worker.

## PROJECT GENERATED VMT PER EMPLOYEE

The Riverside Transportation Analysis Model (RIVTAM) is a useful tool to estimate VMT as it considers interaction between different land uses based on socio-economic data such as population, households, and employment. RIVTAM is a travel forecasting model that represents a sub-area of the SCAG model. The model was originally completed in 2009 and was later updated to include a 2012 base year and 2040 forecast horizon year. The model was designed to provide a greater level of detail and sensitivity in the Riverside County area as compared to the regional SCAG model. The City Guidelines identifies RIVTAM as the appropriate tool for conducting VMT analysis for land use projects in the City of Riverside.

Project VMT has been calculated using the most current version of RIVTAM, which includes a 2012 base year model and a 2040 horizon year model. Adjustments in socio-economic data (SED) (i.e., employment) for the Project have been made to a separate traffic analysis zone (TAZ) within the RIVTAM model to reflect the Project's proposed land use (i.e., industrial/warehouse type use). A separate TAZ has been utilized in order to isolate trips to/from the Project. Table 1 summarizes the employment factors and employment estimates for the Project.

**TABLE 1: EMPLOYMENT DENSITY FACTORS**

|                                        | <b>Project</b>      |
|----------------------------------------|---------------------|
| Building Square Footage                | 603,100             |
| Employment Density Factor <sup>4</sup> | 1 employee/1,030 SF |
| Employment                             | 586                 |

Adjustments to employment for the Project's TAZ were made to both the RIVTAM base year model (2012) and the cumulative year model (2040). Project-generated home-based work VMT was then calculated for the base year model (2012) and cumulative year model (2040). The VMT is then normalized by dividing by the number of Project employees. As shown in Table 2, the Project base year (2012) VMT per employee is 15.71 and the Project cumulative year (2040) VMT per employee is 17.34.

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<sup>4</sup> Employee Density Factor was obtained from the County of Riverside General Plan Appendix E-2: Socioeconomic Build-Out Assumptions and Methodology (see Table E-5, Commercial Employment Factors, Page 3).

**TABLE 2: PROJECT VMT PER EMPLOYEE**

|                | 2012 Project | 2040 Project |
|----------------|--------------|--------------|
| VMT            | 9,206        | 10,159       |
| Employment     | 586          | 586          |
| VMT / Employee | 15.71        | 17.34        |

## **CITY OF RIVERSIDE VMT PER EMPLOYEE**

The City of Riverside's current baseline VMT per employee for current baseline conditions is 13.24. As noted in the City Guidelines this information is available through the WRCOG Screening Tool and is shown in Attachment A of this report.

## **PROJECT LEVEL VMT ASSESSMENT**

Table 3 illustrates the comparison between the Project generated VMT per employee to the City of Riverside's current baseline VMT per employee. As shown, the Project would exceed the threshold of 15% below the current baseline City of Riverside VMT per employee for both the baseline and cumulative Project generated VMT. As such, the Project's impact is potentially significant.

**TABLE 3: VMT PER EMPLOYEE COMPARISON**

|                                        | 2012 VMT/Employee | 2040 VMT/Employee |
|----------------------------------------|-------------------|-------------------|
| City of Riverside Current VMT/Employee | 13.24             | 13.24             |
| Project VMT/Employee                   | 15.71             | 17.34             |
| Percent Change                         | +18.66%           | +30.97%           |
| Potentially Significant?               | Yes               | Yes               |

## **PROJECT'S EFFECT ON VMT**

Consistent with City Guidelines, projects that are found to have a potentially significant impact using efficiency-based metrics (such as VMT per employee) should also provide an additional assessment to evaluate a project's effect on VMT. As noted in the City Guidelines, this analysis is performed using the boundary method, which includes all vehicle trips with one or both trip-ends within a specific geographic area of interest (i.e., the City of Riverside). As shown on Table 4, the Project is anticipated to result in a base year (2012) net decrease of 0.200 VMT per employee and a cumulative year (2040) net decrease of 0.091 VMT per employee. The Project's effect on VMT is less than significant.

**TABLE 4: PROJECT'S EFFECT ON CITY OF RIVERSIDE VMT**

|                          | 2012 Without Project | 2012 With Project | 2040 Without Project | 2040 With Project |
|--------------------------|----------------------|-------------------|----------------------|-------------------|
| VMT                      | 5,730,358            | 5,734,341         | 8,723,408            | 8,724,916         |
| Employment               | 119,544              | 120,130           | 228,619              | 229,205           |
| VMT/Employee             | 47.935               | 47.735            | 38.157               | 38.066            |
| Change in VMT            | -0.200               |                   | -0.091               |                   |
| Potentially Significant? | No                   |                   | No                   |                   |

## POTENTIAL VMT REDUCTION STRATEGIES

Transportation demand management (TDM) strategies have been evaluated for the purpose of reducing VMT. The purpose of TDM strategies is to reduce the need for single occupancy automobile trips. The effectiveness of TDM strategies available to individual land use projects in Riverside County was thoroughly evaluated by the SB 743 Implementation TDM Strategy Assessment (February 26, 2019, Fehr & Peers) (**WRCOG Report**) prepared for WRCOG, which evaluated the TDM measures identified in the Quantifying Greenhouse Gas Mitigation Measures (CAPCOA, 2010) (**CAPCOA**) for their relevance to projects in the WRCOG area.

The WRCOG Report indicates that of the 50 transportation measures presented by CAPCOA, only 41 are applicable at a building and site level. The remaining 9 measures are functions of, or depend on, site location and/or actions by local and regional agencies or funders. Based on a review of the 41 transportation measures identified by CAPCOA, the WRCOG Report identifies that only a few of those measures have the potential to be effective at the project level in the predominantly suburban context of the WRCOG area. Evaluation of potentially applicable TDM strategies in the context of the proposed Project is summarized below.

- Measure 1: Increase Diversity of Land Uses (LUT-3). Having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transportation. For example, when residential areas are in the same neighborhood as retail and office buildings, a resident does not need to travel outside of the neighborhood to meet his/her trip needs.

Remarks: The Project proposes the construction of two high-cube short-term transload warehouse buildings, totaling 603,100 square feet. In order for the above measure to apply, at least three of the following will be located on-site, or off-site within ¼ mile of the Project: Residential Development, Retail Development, Park, Open Space, or Office. There is residential and limited retail located off-site within ¼ mile south of the Project, and park/open space (Sycamore Canyon Wilderness Park) within a ¼ mile north of the Project. As the proposed Project does not include a mix of land uses within the development site, but is instead located within a sphere of influence to a mix residential and retail uses (i.e., ¼ mile radius), this particular TDM measure would provide a low reduction and is therefore not evaluated further as a means of providing a reduction in Project VMT.

- Measure 2: Provide Pedestrian Network Improvements (SDT-1). Providing a pedestrian access network to link areas of the Project site encourages people to walk instead of drive assuming that desirable destinations are within walking distance of the Project. This mode shift results in people driving less and a reduction in VMT.  
Remarks: There are existing sidewalks along Alessandro Boulevard and Barton Street. The Project is proposing to improve the pedestrian network along the Project frontage and at the intersection of Vista Del Grande & Alessandro Boulevard. As noted in the WRCOG Report and by CAPCOA, this measure would provide a nominal reduction in Project VMT due to the limited new pedestrian connections created.
- Measure 3: Provide Traffic Calming Measure (SDT-2). Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. This mode shift will result in a decrease in VMT. Traffic calming features may include: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others.  
Remarks: The Alessandro Boulevard corridor provides for sidewalk and bike lane enhancements. There is limited opportunity for the Project to implement meaningful enhanced mitigation in this area. This measure is therefore not evaluated further as means of providing a reduction in Project VMT.
- Measure 4: Implement Car-Sharing Program (TRT-9). Implementing a car-sharing program would allow individuals to have on-demand access to a shared fleet of vehicles on an as-needed basis. User costs are typically determined through mileage or hourly rates, with deposits and/or annual membership fees.  
Remarks: It is possible that employers within the Project site could implement car-sharing programs. This may provide car access for employees on an as-needed basis, and thereby alleviate some of the costs and responsibilities of individual car ownership. The effectiveness of this measure is dependent on the ultimate building tenant(s) which are unknown currently. As such, this measure is therefore not evaluated further as means of providing a reduction in Project VMT.
- Measure 5: Increase Transit Service Frequency and Speed (TST-4). This measure serves to reduce transit-passenger travel time through more reduced headways and increased speed and reliability. This makes transit service more attractive and may result in a mode shift from auto to transit which reduces VMT.  
Remarks: The study area is currently served by Riverside Transit Agency (RTA), a public transit agency serving various jurisdictions within Riverside County. RTA Routes 20 and 26 currently provide proximate service (within one-quarter mile) of the Project site. Transit service is reviewed and updated by RTA periodically to address ridership, budget and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. It is recommended that the Applicant work in conjunction with the Lead Agency and RTA to coordinate potential bus service to the Project site. Since implementation of this strategy would require agency implementation it is not applicable for individual development projects. This measure is therefore not evaluated further as means of providing a reduction in Project VMT.
- Measure 6: Encourage Telecommuting and Alternative Work Schedule (TRT-6). Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.

Remarks: The effectiveness of this measure is dependent on the ultimate building tenant(s) which are unknown currently. As such, this measure is therefore not evaluated further as means of providing a reduction in Project VMT.

- Measure 7: Provide Ride-Sharing Programs (TRT-3). This strategy focuses on encouraging carpooling and vanpooling but its ultimate implementation is limited as Measure 6 above.

Remarks: The effectiveness of this measure is dependent on the ultimate building tenant(s) which are unknown currently. As such, this measure is therefore not evaluated further as means of providing a reduction in Project VMT.

The effectiveness of the above-noted TDM measures would be dependent in large part on future Project occupancies, which are unknown at this time. Beyond Project tenancy considerations, land use context is a major factor relevant to the potential application and effectiveness of TDM measures. More specifically, the land use context of the Project is characteristically suburban center. Of itself, the Project's suburban center context acts to limit the range of feasible TDM measures and moderates their potential effectiveness. Relevant discussion in this regard is presented in *WRCOG SB 743 Implementation Pathway Document Package* (Fehr & Peers [for WRCOG]) March 2019, excerpted in pertinent part below:

The Technical Advisory relies on the Quantifying Greenhouse Gas Mitigation Measures, (CAPCOA) 2010 resource document to help justify the 15 percent reduction in VMT threshold stating, “. . . fifteen percent reduction in VMT are achievable at the project level in a variety of place types . . .”. A more accurate reading of the CAPCOA document is that a fifteen percent is the maximum reduction when combining multiple mitigation strategies for the *suburban center*<sup>5</sup> place type. For *suburban*<sup>6</sup> place types 10 percent is the maximum and requires a project to contain a diverse land use mix, workforce housing, and project-specific transit. It is also important to note that the maximum percent reductions were not based on data or research comparing the actual performance of VMT reduction strategies in these place types. Instead, the percentages were derived from a limited comparison of aggregate citywide VMT performance for Sebastopol, San Rafael, and San Mateo where VMT performance ranged from 0 to 17 percent below the statewide VMT/capita average based on data collected prior to 2002. Little evidence exists about the long-term performance of similar TDM strategies in different land use contexts. As such, VMT reductions from TDM strategies cannot be guaranteed in most cases (*WRCOG SB 743 Implementation Pathway Document Package*, pp. 65 – 66).

As indicated in the preceding discussion, even under the most favorable circumstances, projects located

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<sup>5</sup> **Suburban Center:** A project typically involving a cluster of multi-use development within dispersed, low-density, automobile dependent land use patterns (a suburb). The center may be an historic downtown of a smaller community that has become surrounded by its region's suburban growth pattern in the latter half of the 20th Century. The suburban center serves the population of the suburb with office, retail and housing which is denser than the surrounding suburb (*Quantifying Greenhouse Gas Mitigation Measures*, p. 60).

<sup>6</sup> **Suburban:** A project characterized by dispersed, low-density, single-use, automobile dependent land use patterns, usually outside.

Ms. Sonya Hooker  
Ruth Villalobos & Associates, Inc.  
October 1, 2020  
Page 9 of 10

within a suburban center context, such as the proposed Project evaluated here, could realize a maximum 15 percent reduction in VMT through implementation of feasible TDM measures. The Project is estimated to exceed the current City of Riverside VMT per employee by 18.66% in base year (2012) and 30.97% in cumulative year (2040). Given that the maximum percent reduction is 15% through feasible TDM measures, the Project cannot reduce the Project-generated VMT to below the threshold of 15% below the current City of Riverside VMT per employee.

The Project VMT impact is therefore considered ***significant and unavoidable***.

If you have any questions, please contact me directly at (949) 336-5978.

Respectfully submitted,

URBAN CROSSROADS, INC.

A handwritten signature in black ink, appearing to read 'Aric Evatt'.

Aric Evatt, PTP  
President

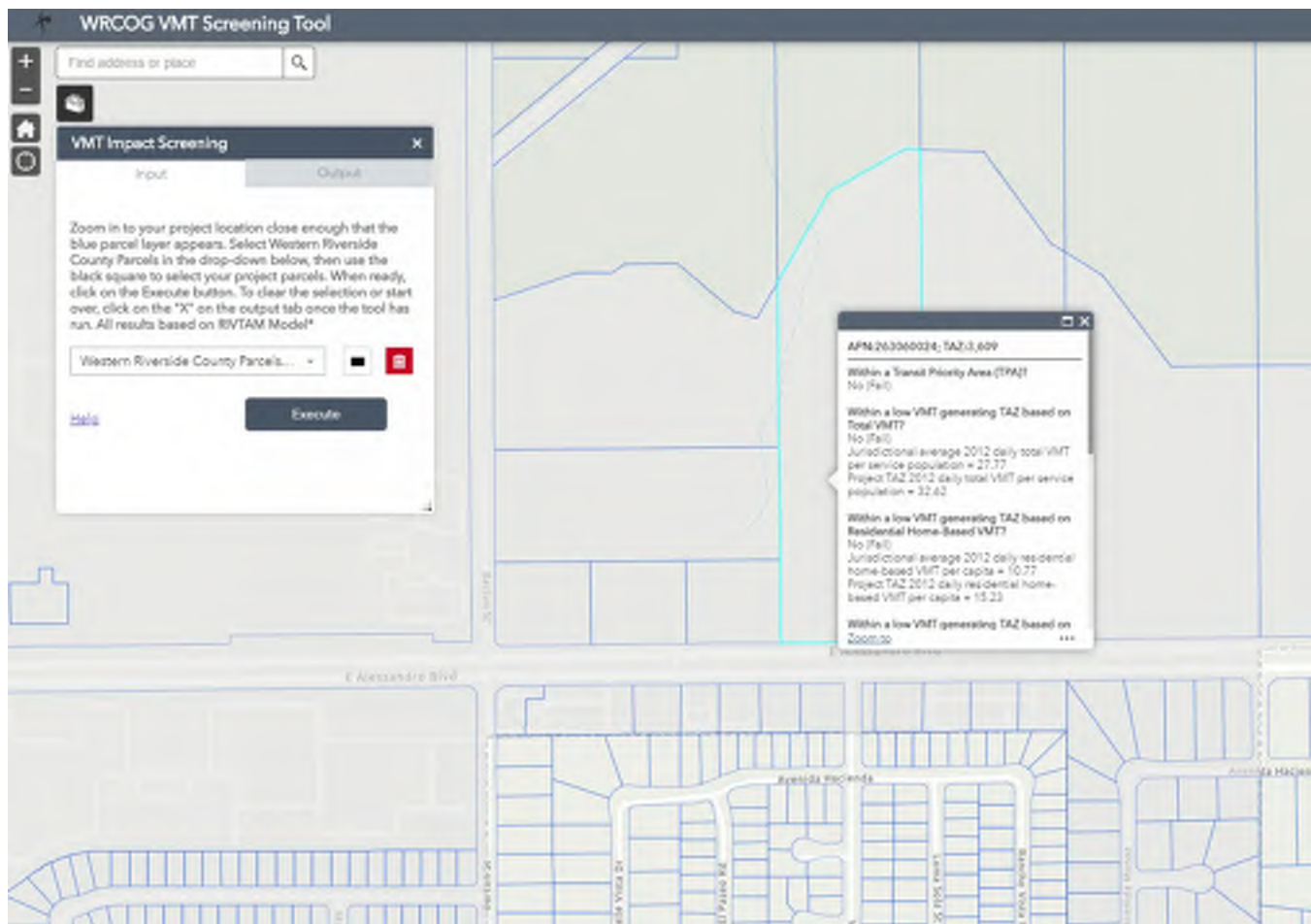
A handwritten signature in black ink, appearing to read 'Robert Vu'.

Robert Vu, PE  
Transportation Engineer

## REFERENCES

1. **Institute of Transportation Engineers.** *Trip Generation Manual*. 10th Edition. 2017.
2. **Urban Crossroads, Inc.** *Sycamore Hills Distribution Traffic Impact Analysis*. August 2020.
3. **Office of Planning and Research.** *Technical Advisory on Evaluating Transportation Impacts in CEQA*. State of California : s.n., December 2018.
4. **Western Riverside Council of Governments (WRCOG).** *Recommended Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment*. February 13, 2020.
5. **City of Riverside Public Works Department.** *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment*. City of Riverside : s.n., July 2020.

**ATTACHMENT A**  
**SCREENING TOOL RESULTS**



APN:263060024; TAZ:3,609

Within a Transit Priority Area (TPA)?  
No (Fail)

Within a low VMT generating TAZ based on Total VMT?  
No (Fail)  
Jurisdictional average 2012 daily total VMT per service population = 27.77  
Project TAZ 2012 daily total VMT per service population = 32.62

Within a low VMT generating TAZ based on Residential Home-Based VMT?  
No (Fail)  
Jurisdictional average 2012 daily residential home-based VMT per capita = 10.77  
Project TAZ 2012 daily residential home-based VMT per capita = 15.23

Within a low VMT generating TAZ based on Home-Based Work VMT?  
No (Fail)  
Jurisdictional average 2012 daily home-based work VMT per worker = 13.24  
Project TAZ 2012 daily home-based work VMT per worker = 15.91

Notes:

- TPA designation is based on October 2016 conditions.
- Screening results are based on location of parcel centroids. If results are deemed considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
- If VMT screening is desired for current baseline conditions, contact WRCOG for 2012 and 2040 VMT data. Interpolated VMT results can be obtained using the complete data set.
- VMT results do not account for full length of trips that occur beyond the SCAG region.